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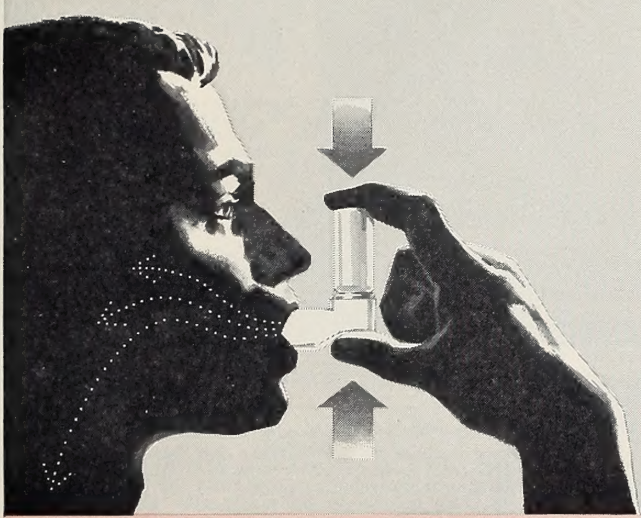

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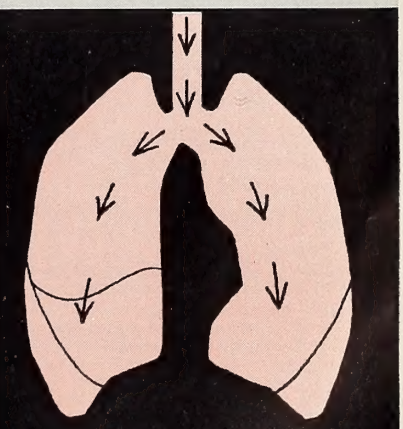

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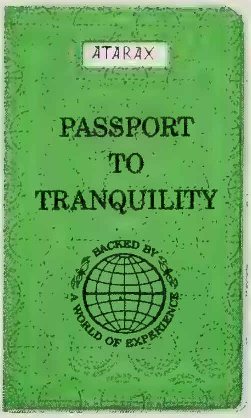

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1. Smylie, H. G.; Webster, C. U., and Bruce, M. L.: *Brit. M. J.* 2:606, Oct. 3, 1959. 2. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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National Association of Blue Shield Plans Reports All-Time High in Payments to Physicians

More than $664,000,000 was paid to physicians in 1959 by the 73 Blue Shield Plans located in North America, the National Association of Blue Shield Plans reported April 25.

"The payment of $664,301,706 to the medical profession for care rendered Blue Shield members represented an all-time high for a one-year period, and also represented nearly 90 per cent of the total 1959 income of these medical-surgical plans," John W. Castellucci, executive vice-president of the national association reported. Meanwhile, the plans spent less than 10 per cent of their total income last year for administrative expenses.

The national association reported that payments to physicians over the past decade had increased from nearly $116,000,000 in 1950 to the 1959 figure of $664,301,706.

For the same comparable period, administrative expenses dropped from 13 per cent of total income in 1950 to last year's figure of less than 10 per cent.

"Blue Shield's important contribution to the health care economy of North America is evidenced by its growing role over the past decade in helping millions of its members pay for needed medical and surgical care," Castellucci said. "And not to be overlooked," he added, "is the fact that despite the effects of inflation and the increased cost of doing business, Blue Shield Plans have performed another service to their members and the medical profession by annually expending a smaller portion of their income dollar to administrative expenses."

Prognosis Improves for Cystic Fibrosis Victims

The survival prospects for victims of cystic fibosis, a generalized hereditary disease of unknown cause, is becoming "increasingly favorable," according to an editorial in the April 30 *Journal of the American Medical Association.*

"The prognosis, although guarded, has been increasingly favorable as far as life span is concerned," the editorial said.

"Prior to 1938 most patients with cystic fibrosis died of bronchopneumonia in infancy or early childhood. . . .

"Many patients now survive to adolescence or young adulthood."

The *Journal* also commented that the disease "is breaking out of the pediatric bounds to which it had earlier been limited by its high mortality in infancy and childhood and is now invading the domain of diseases of the adult." According to a recent report, the editorial said, cystic fibrosis "may prove to be even commoner in adults than in children."

(Continued on Page 14)

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Segregation Still Needed In Leprosy Control

A member of the World Health Organization's Second Expert Committee on Leprosy said recently that segregation is still needed to control the disease.

In a letter printed in the *Journal of the American Medical Association*, Dr. H. W. Wade, Culion Sanitarium, Palawan, Philippines, criticized a news release issued by WHO headquarters in Geneva last August.

He said the release to the effect that the committee had recommended abolition of leprosariums is "simply not true."

Furthermore, he said, the statement in the release saying that the age-old custom of keeping lepers apart from the rest of the community is unnecessary from the medical point of view is "hardly less misleading."

"The recommendation of the committee, in keeping with resolutions of several international meetings held in recent years, is that leprosy should be treated more or less as tuberculosis is treated, with hospitals for the care of patients suffering from the acute 'reactional' episodes of leprosy, for the surgical reconstruction of patients with mutilations, and for the training of personnel and other administrative purposes," the letter said.

Dr. Wade also clarified the committee recommendations in connection with legislation.

"It was recommended that special laws applying solely to leprosy be abolished and that the disease be taken care of by regulations set up under general laws pertaining to the control of communicable diseases as a whole," he said. "That would not, by any means, preclude isolation of some patients if it seems necessary under local conditions in the light of present knowledge of the disease."

Prognosis Improves for Cystic Fibrosis Victims

(Continued from Page 12)

The disease involves an impairment of exocrine glands, such as the sweat glands, leading to chronic lung disease and a disorder of the pancreas, the editorial said. It appears to be genetically transmitted as a recessive trait, and, therefore, both parents must presumably carry the recessive gene, the *Journal* said.

"One of the most challenging of the recent developments is the possible relation of this syndrome to some chronic pulmonary and gastrointestinal disorders of adults," it said.

"Unknown until 25 years ago, cystic fibrosis . . . is now thought to be one of the most common and one of the most serious chronic diseases of childhood.

"The incidence of cystic fibrosis in its fully manifested form has been variously estimated as 1 or 1.5 per 1,000 live births."

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Hypnosis Does Not Abolish Perception of Pain

Hypnosis does not completely abolish the perception of pain, according to Dr. Eugene A. Kaplan, a Syracuse, N. Y., psychiatrist.

Writing in a recent issue of *Archives of General Psychiatry*, published by the American Medical Association, Dr. Kaplan said pain during hypnosis "is not relieved in the sense of being minimized or abolished, but, rather, is denied or repressed via an artificially induced dissociative state."

He based his opinion on an experiment conducted with a 20-year-old white male college student.

The subject, during a course of four hypnotic interviews, developed the ability of automatic writing, i.e., his right hand was able "to write anything it wanted to, not subject to the control or restrictions of the 'conscious' personality."

In the experiment, the subject was told in advance that his arm would be pricked several times and that he was to say whether he felt anything. It was then suggested to the subject by hypnosis that his left arm would be insensible to pain. The left arm was pricked. The subject indicated no feeling and even asked the experimenter, "When are you going to begin?"

However, Dr. Kaplan said, from the moment the pricking began, the subject's right hand had begun to write: "Ouch, damn it, you're hurting me!

Dr. Kaplan said this showed that "despite hypnotic anesthesia, and denial of pain by the conscious personality, this pain is perceived and experienced as unpleasant, and evoked a negative reaction in one portion of the subject's total personality.

"It would also appear likely that under usual circumstances that portion of the personality which experiences the discomfort is unheard (unless it expresses itself in other kinds of symptoms, symbols, or signs sometime in the future).

"This kind of interpretation or explanation of what occurs when hypnosis is used in an attempt to prevent or relieve pain raises certain reservations about its use.

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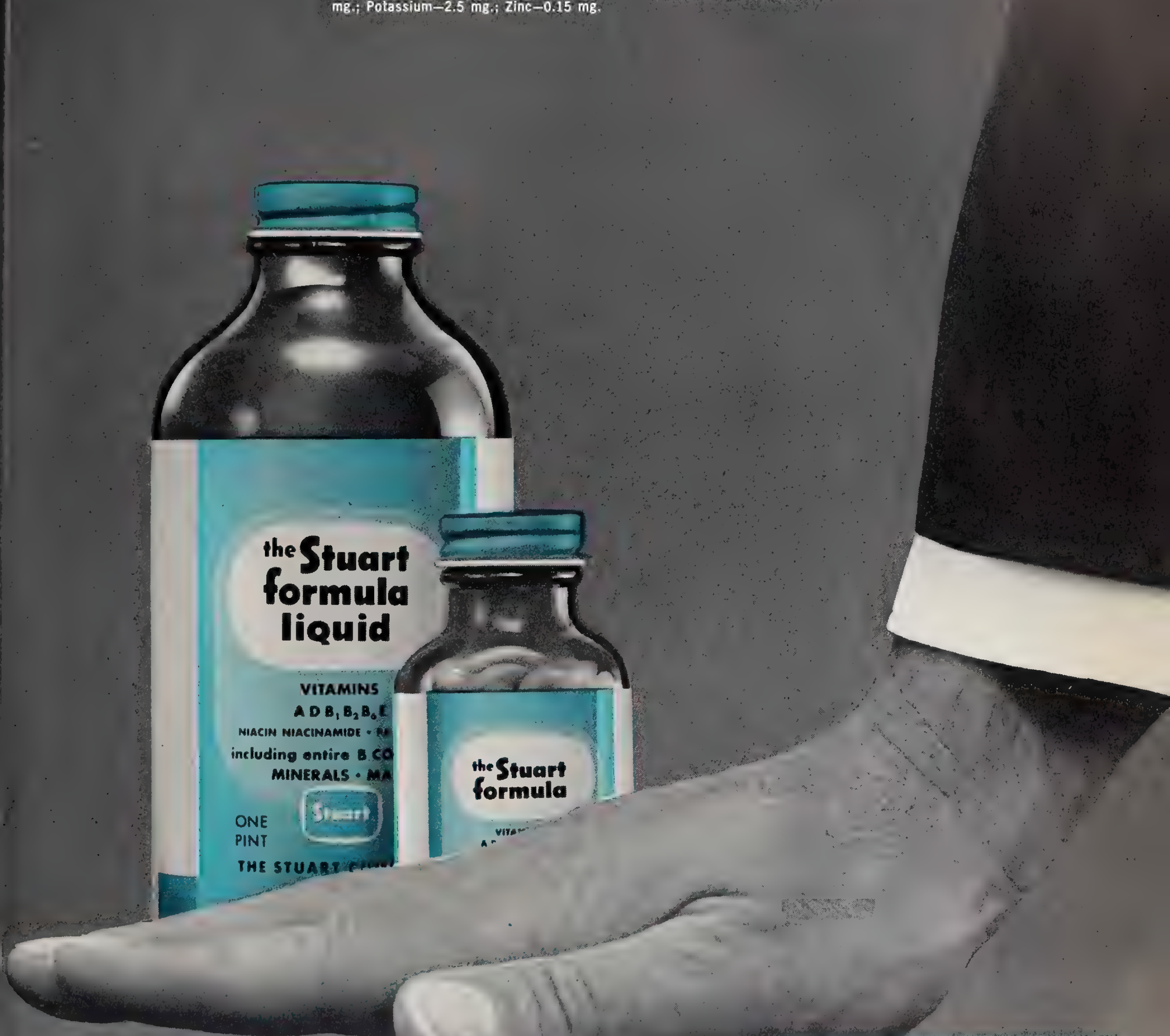

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Suppressed Anger Raises Blood Pressure

A close relationship between suppressed anger and high blood pressure was reported recently in the *Archives of General Psychiatry*.

Dr. Donald Oken, Chicago, writing in the American Medical Association journal, said a study of 10 psychiatric patients with normal blood pressure provides "additional support for the hypotheses which relate hypertension and inhibited anger."

In the study, interviewers aroused anger, anxiety, and depression in the 10 subjects while their physiological response was being recorded.

"The data obtained in this study indicate a close relation between anger and both heart rate and blood pressure, especially the latter," Dr. Oken said.

When subjects who expressed their anger vocally and physically were compared with those who repressed it, the latter showed a higher diastolic blood pressure, but there was no significant difference in heart rate.

In the absence of heart rate changes, Dr. Oken said, diastolic blood pressure is primarily a function of peripheral resistance (the narrowing of the smallest branches of the arteries throughout the body).

The results indicate that "persons who inhibit anger will have a higher diastolic blood pressure (and peripheral resistance) than those who more freely express it," he said.

"The relevance of these findings to the thesis that essential hypertension may be the result of chronically inhibited angry feelings is clear. This disease is characterized by an elevated peripheral vascular resistance."

Although the findings are far from "proof" that anger plays a causal role in hypertension, he said, they do underline the importance of anger and the need for its further study.

Dr. Oken is associated with the Institute for Psychosomatic and Psychiatric Research and Training, Michael Reese Hospital.

Soot Found Related to Lung Disease

A correlation between soot deposits and a lung disease, emphysema, was reported in the April 30 *Journal of the American Medical Association.*

Dr. Charles P. Oderr, chief, Radiology Service, Veterans Administration Hospital, New Orleans, said deposits of soot in the functional parts of the lung are "strongly correlated" with the common form of chronic emphysema.

In emphysema, the normal air spaces in the lungs are stretched and the walls are enlarged.

Dr. Oderr studied 200 lungs of adults representing a cross section of patients dying of diseases other than tuberculosis and lung cancer.

(Continued on Page 26)

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Soot Found Related to Lung Disease

(Continued from Page 24)

He found that the disease usually developed first in small areas of trapped soot.

He also found that the area of soot deposit frequently extended beyond the areas of developed emphysema and that the disease seldom developed when there was no soot deposit.

"One gets the impression that the disease process is 'invading' the soot-laden areas," Dr. Oderr said.

Commenting editorially on the article, the *Journal* said:

"The effects on public health of unsavory gases and solids in the air is of first importance. It seems obvious, in some places, that the effects have been detrimental. However, as yet scientific proof of the specific hazards to human health is fragmentary, making it difficult to arrive at valid conclusions. Many studies have been published; many are under way.

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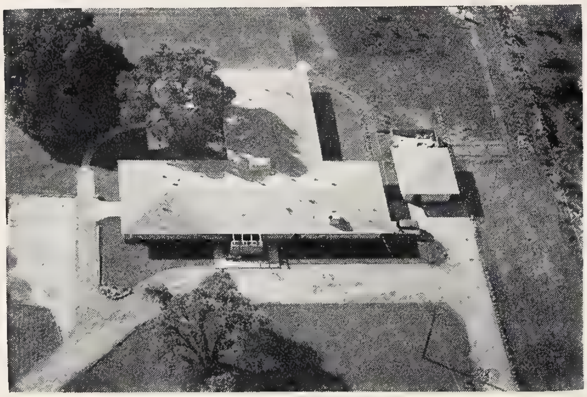

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Digital Computer Opens New Fields Of Medical Research

The electronic digital computer, a "newcomer" to the medical world, promises to open new fields of inquiry, the *Journal of the American Medical Association* said recently.

"The electronic digital computer offers to medicine the possibility of entering areas of inquiry which have not been possible in the past because of the time consideration due to the complexity of the method of solution or to the complexity and magnitude of the information involved," according to an editorial in the May 7 *Journal.*

"The computer has the ability to store great masses of heterogeneous information at high speed into physically compact form," it said.

"It can also retrieve part or all of this information at tremendous speed.

"Because of the high-speed manipulative skill of the computer and the high speed at which records can be interrogated it would appear that all medical information, experimental or clinical, could function by means of the computer both as data for research and as all or part of a retrievable historical medical record."

The clinical use of such a computer was described in an accompanying article by Joseph E. Schenthal, M.D., Tulane University Medical School, and James W. Sweeney, Ph.D., and Wilson Nettleton Jr., of the Tulane University Computer Center.

"The tremendous capacity for remembering of the larger digital computer makes it valuable for clinical patient care and investigation," they said.

"It does not take the place of the clinician or investigator but is an instrument which assists in the search and correlation of larger quantities of data than could be found or correlated prior to its invention."

In some types of investigation, the machine can produce in a matter of minutes the answer that by previous techniques would take years, it was pointed out.

The three researchers based their article on work done with a medium-size digital computer and punch-card methods. They said this process permits the recording and storage of medical data ranging from the most precise laboratory values to the informative impressions of the clinician as well as all supplementary laboratory data concerning the patient.

"This technique, when supplanted or supplemented by the use of magnetic tape, may be the solution to the problem of medical record storage not only from the aspect of the decreased physical space requirements but also, which is of even more significance, from the aspect of retrievability," they concluded.

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The Best Medical Care

The Public Relations Committee of the California Medical Association recognizes that medical public relations is a reflection of every event in each doctor's office, every action or inaction of each medical society and every public utterance of each doctor speaking officially or unofficially. The importance of good medical public relations has been emphasized repeatedly through the years in various actions of the Council and the House of Delegates of the California Medical Association.

The goal of the medical profession is, through all its activities, including public relations, to achieve and preserve the best medical care for every individual.

MALCOLM S. M. WATTS, *M.D., Chairman*

THERE CAN BE NO DOUBT that the best medical practice and with it the best medical care for patients is now being challenged. The responsibility of the profession is clear. The essential elements of the best medical care must be identified and publicized. They must be preserved and adapted to the modern economic, sociological and political environment. The best in medical care must be constantly improved. So far as is humanly possible, it must be made available to every individual.

The Essential Elements

The best medical care embodies the essential elements of the doctor-patient relationship. These include (1) the need of an individual patient for help with a particular problem, (2) the concern of the doctor with the individual patient, (3) the secure belief of the patient that the physician can and will help and (4) the tool or technology by which the help is given. The best medical care can be rendered only when all these elements are present. Patients are individuals with individual problems. These require recognition by an adequately motivated physician who has the confidence of the patient and the knowledge and wherewithal to solve the problem.

In the Community and the Group

The essential elements of the best medical care also apply at the community or group level in three ways. First, activities at those levels should preserve these elements in professional relationships between doctors and patients. Second, these elements are essential when physicians or their medical associations apply the principles of diagnosis, treatment or prevention to the economic, social or political problems of patients or groups of patients with regard to their medical care. Third, these essential elements can govern the relationship between the medical society and the community which it serves, with organized medicine in the role of "physician" and the community in the role of "patient."

For the Patient and the Public

For the patient and the public the best medical care therefore embodies a recognition of the patient's need either in terms of his physical and emotional condition or of his economic, social or political situation. It insures that the doctor's primary allegiance remains to the patient and that it is not diluted by financial or other responsibilities to collective groups within or without the profession. It provides freedom of action for both doctor and patient, both before and after illness strikes, in order that the patient may derive the physiologic benefit and the psychologic comfort of faith in his medical care. It requires the economic, sociologic and technologic availability of competent physicians, ancillary personnel and of adequate wherewithal for service to the patient.

THE AMERICAN SYSTEM OF FREE ENTERPRISE

The best medical care is inescapably a product and a part of the traditional American system of free enterprise.

Like our way of life, it is vital, dynamic, changing and growing. It must adjust to the American way of life. At present this includes rising costs, deficit financing and the use of prepayment, tax-free and tax funds in medical care. The best medical care has an opportunity to respond to the great urge of almost every American to improve his standard of living. Most Americans will pay more for better cars, better housing, better food or clothing. They will pay the cost of better medical care if they understand it and are convinced of its benefits.

Prudent Research and Experiment

Such vital, growing, better medical care must be subject to prudent research and experiment. Any such experiment should avoid undue risk for the human individual and should preserve the essential elements of the best medical practice. In its experiments in scientific medicine the profession has long accepted this principle. Sociologic and economic experiments should also be assessed in terms of this previously described "best medical care," and in terms of possible abuses of plans, of administrative waste, of overhead and ultimate cost which is eventually met by the consumer—the patient or the potential patient. To satisfy the purchaser, the best medical care plans must provide the patient with some degree of certainty of coverage of costs. For the administrator there must be some predictability and control of costs. For the patient and physician there should be freedom of choice and freedom of action in the management of the individual's problem.

This "best medical care" is a living, dynamic reality which must become understood and appreciated by patients and potential patients. It must be available to every individual who may need it. This is an achievement of and a challenge to the American system of free enterprise.

- **Good medical public relations is good performance which is understood and appreciated. This good performance means the best medical care for every individual and a dedication to its constant improvement. This can best be accomplished and understood by making the doctor-patient relationship a living reality in the office, in the community, in the state and in terms of economic, sociological and political problems in medical care. The need of the patient for help must be identified, the doctor's willingness to help must be demonstrated and the patient convinced that the doctor is interested and able to help. Tools and technology must be developed for prevention, treatment and rehabilitation. When these things are done, the good performance will not only be understood but it will be appreciated. Achieving this, the best interest of the patient, the human individual and the voter will be secure, and with them the best interests of medical practice and of the physician.**

THE ROOTS OF SOME PROBLEMS IN MEDICAL CARE

Upon reflection, it appears that there are five basic underlying causes of the medical care problems of today which must be considered in any effective program of medical public relations to provide the best medical care for every individual:

1. *The growth of science* has resulted in specialization in medical practice which has extended even beyond the medical profession to include many paramedical technologies and services rendered by many public and private health and welfare agencies. Also, the growth of science has affected the whole of society and has brought everyone into a closer and more interdependent relationship. The medical profession has found it difficult to maintain its position of leadership in some fields of medical care.

2. *Economic changes* have had profound effects. Scientific advances have made medical care more complex and more expensive. The cost of living has risen, the value of the dollar has been lessened, and taxes have greatly increased. The necessary development of prepayment, tax-free and tax funds to spread the growing cost of illness has resulted in great changes in medical practice. These trends may be expected to continue.

3. *Sociologic trends* inherent in our democracy have tended to deemphasize the particular interests of the individual; to make these interests gradually subservient to the principle of the greatest good for the greatest number. However, medical care is a very personal matter and the medical profession is

one of the few important nationally organized groups whose primary concern is with the welfare of the individual as it is distinct from the welfare of the majority.

4. *Political developments* have reflected these scientific, economic and sociologic changes. Public officials increasingly rely upon the advice, counsel and financial support of organizations that represent collective interests. The individual and his individuality have lost sociologic, economic and political force. No organization has given power to the voice of human individuality. Even the courts seem less apt to uphold the right of an individual to be different. The pressures for conformity are seldom neutralized.

5. *The structure of the medical profession* is that of a scientific society. Its strength has been in the development, dissemination and application of scientific knowledge and technique. Its structural organization and system of communications, geared to scientific needs, have proved cumbersome, awkward and inadequate for other purposes. It is only beginning to assert economic, social and political leadership in the interest of the individual patient.

SOME FALLACIOUS CONCEPTS

Several fallacious concepts have been introduced which have had surprisingly wide acceptance and therefore bear upon the problem of medical public relations and the best medical care:

1. Many have come to consider medical care to be simply a product or *commodity* consisting of diagnostic procedures, x-rays, laboratory tests, operations, pills, injections and the like. To them, the best medical care merely requires the application of well-known mass production and mass distribution techniques to this commodity in the best American tradition.

2. Many have come to believe that medical care is in fact a *precise science* which could almost guarantee health for all if it could only be made available to everyone. This fallacy is perilously close to the hopeless search of Ponce de Leon for the Fountain of Youth.

3. Many believe that *medical care should be "free."* Of course it can never be free. It must ultimately be paid for by the consumer. In general, the more complex the system for making it "free," the more costly medical care becomes, for the cost of the *system* must be added to the cost of patient care.

4. It is often assumed that the doctor will work devotedly in the interest of the patient no matter who pays him. This assumes that *doctors are somehow different* from other people. To the extent that a doctor works *for* the government, *for* a union or *for* an insurance company, or *for* anyone other than the patient, his interest in the patient is proportionately reduced. When pools of money for medical care are collected through prepayment, fringe benefits or tax funds the question is seldom asked "whose money is it?" Yet always it should be considered as *held in trust for the medical care of the patients.*

5. It is assumed by many that the *greatest good for the greatest number* and the best in medical care for the individual patient are identical. Upon reflection, this principle is found to apply whenever there is, or may be, great disparity between the numbers of persons in need of medical care and the amount of services that may be available. Thus, it applies in potentially epidemic situations when the public health is endangered, in military medicine, in civilian defense and in certain remote or undeveloped areas where adequate facilities and services are not available. While these "epidemic" needs must be met, they should not be confused with the best medical care for the individual patient in normal circumstances. The average American has received and continues to be entitled to personalized care for his individual needs which may or may not be similar to the problem of others.

6. *"Freedom from"* is often confused with *"freedom to."* The question here is to what extent is the independence of the individual and his right to personal consideration to be sacrificed to dependence upon and interdependence with the greatest good for the greatest number. Medical care is now becoming considered a social necessity along with food, shelter and clothing. Freedom from want has not been confused with freedom to choose food, housing and clothing. Freedom from cost of medical care has been confused with freedom to choose medical care particularly after illness strikes.

SOME PUBLIC RELATIONS GOALS

A program of good medical public relations, to achieve the best medical care for every individual should be directed toward certain goals:

1. *The best in medical care* must become recognized as best for the individual patient. Its essential nature and value must become understood. There must be no compromise with the concept of the greatest good for the greatest number except when this is clearly in the best interests of the individual patient as a stop gap emergency measure. There must be no compromise with the mediocrity which collectivism ultimately engenders.

2. *The doctor-patient relationship* must be made a living reality in the office, hospital, home and at organizational levels. It is a critical distinction between individual and collective medical care. The

interest of the doctor and his profession in the individual patient must be extended to include political, social and economic problems as they pertain to medical care.

3. *Medical science must be placed in perspective* as the tool with which the doctor works and not a commodity to be mass produced and mass distributed. Both its accomplishments and its shortcomings must be made clear.

4. *The best medical care must be available* economically and otherwise to the patient. Where necessary, economic programs must provide him with a degree of certainty of coverage of its cost and retain for him his freedom of choice and freedom of action both before and after he becomes ill. "Freedom to" must be combined with "freedom from" in medical care.

5. *The fractionation of medical practice and medical care must be neutralized.* Efforts must be made to reintegrate generalists and various specialists within the profession, paramedical technologists, public and private health and welfare agencies and sometimes the special interests of departments of public health, into the best medical care for every individual. The medical profession must reaffirm its leadership to insure that all these important and necessary activities be coordinated, guided and assisted by the physician and the medical profession in the interest of individual patients.

6. *Medical societies must become more than scientific associations.* To function in the best interests of the patient and the community they must become effective leaders—"*physicians to the community.*" Their leaders must have the support of an understanding and informed membership. This entails close and effective communications. The morale and enthusiasm of our societies must be high if they are to have unity of purpose and unity of action.

7. *Human individuality in medical care must be supported.* The best medical care is practiced in terms of the individual in its highest professional expression. This essential individuality must be extended and applied in the solution of the economic, sociologic and political problems of medical care. The best medical care must be explained in terms of the individuality of doctor, patient and the relationship between them.

HOW CAN PUBLIC RELATIONS GOALS BE ACHIEVED?

1. *The doctor and his patient.* The basic component of medical public relations is the relationship between the doctor and his patient in the office, in the home and in the hospital. This relationship must be expressed in terms of the best medical care. Programs to strengthen this relationship should be instituted. The practicing physician must train his office assistants and ancillary personnel in basic public relations techniques. He must arrange for adequate coverage of the care of patients during his absence. He must bear in mind that anything he says or does either officially or unofficially is medical public relations.

2. *Services rendered by members of medical societies.* The following services by physicians as members of medical societies are of critical importance:

(a) Adequate doctors and adequate facilities in the community.

(b) 24-hour emergency medical service.

(c) Referral service, adequately publicized.

(d) Public service committees (grievance and mediation committees).

(e) Blood banks and minifilm services, etc., when indicated.

(f) Personal physician program.

(g) Participation in community health and welfare activities as official or unofficial representatives of the medical society.

3. *Medical societies and the public:*

(a) *Press relations* may be cultivated on a personal basis in each community. The press has a responsibility to improve the community and this is a common purpose with the medical profession. To some extent the press moulds, and to some extent it reflects, community opinion.

(b) *Television outlets* have proven to be an excellent means for placing medical science in its proper perspective in the public eye. Radio and television outlets have a recognized public service responsibility to the community. Health education is considered a public service.

(c) *Medical society information services.* These may include professional evaluation of reported medical advances, referral services, information concerning available health and welfare services, etc.

(d) *Speakers bureaus.* Medical societies should encourage their membership to speak and appear in public. The evidence indicates that such appearances do not give rise to unfair competition with colleagues.

4. *Medical societies and ancillary medical groups.* Close sympathetic liaison and effective coordination can be established with office assistants' associations, allied professions, paramedical groups, public and private health and welfare agencies, departments of public health, etc.

5. *Medical societies and medical economics.* Good public relations can be achieved through support of economic programs which respect the individuality of doctors, patients and the relationship between them such as:

(a) Ethical collection agencies.

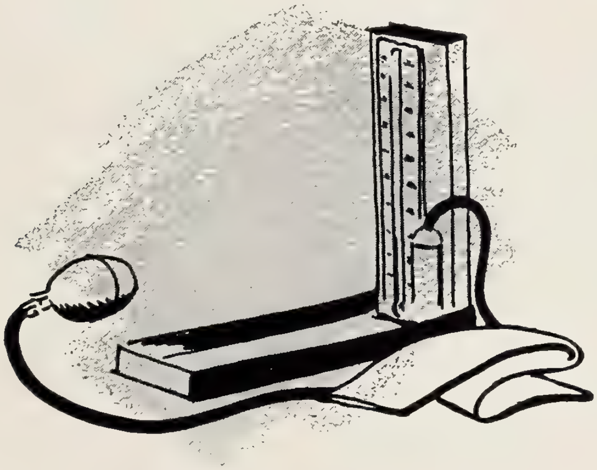
(b) Encouragement and support of any experimental programs in medical care which meet the criteria of the best medical practice.

6. *Medical societies and sociological problems in medical care.* Medical societies, as physicians to the community, can take the lead in many community health problems which, while basically medical in nature, have wide sociological and economic ramifications—problems such as mental health, alcoholism, narcotic addiction, rehabilitation and care of the chronically ill and the aging.

(7) *Medical societies and political problems.* The interest of the medical society in political medical problems can be to uphold the interests of the individual and individuality in medical care in terms of political and legislative activity at the local, state and national level. It is more effective to think and to speak in terms of patient interest than in terms of professional interest. Societies can act through legislative committees, boards of directors and through the individual activity of members. The ultimate source of political power is the voter. The voter is always a patient or potentially a patient.

8. *Medical societies and medical education.* The responsibility of medical societies for medical education is traditional. Educational programs may be directed toward the patient, toward the public and toward the profession itself. Societies may cooperate with ancillary public and private health and welfare agencies in suitable educational programs. Such programs should insure that medical science is presented so that its accomplishments as well as its inadequacies are recognized.

9. *Medical society communications and morale.* To carry out an effective public relations program and play the role of physician to the community, medical societies must develop morale. Members must be proud to belong, be well informed and present a united front in the interest of the patient and the human individual. Leadership must have the support of an understanding and informed membership. This requires close and effective internal communications among leadership, councils, committees and the membership itself.



Serum Amylase in Peptic Gastroduodenal Perforation

A Study to Determine the Significance of Abnormally High Levels

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• Elevated serum amylase is a frequent concomitant of perforated gastroduodenal ulcer. To determine if there might be significant correlation between an increase in amylase and some of the other factors associated with ulcer perforation, a study was made of the clinical records of 1,000 patients with perforation of gastroduodenal ulcers. Sixteen per cent of the patients had amylase levels of 200 Somogyi units or more. This rise in serum amylase comes about in cases of perforated peptic ulcer as a result of peritoneal lymphatic absorption of fluid containing pancreatic enzyme which is spilled through the perforation. Among patients with perforated ulcers and elevated serum amylase levels, the higher the amylase level, the higher the mortality rate.

The factors of amount of abdominal fluid spill, the duration of the perforation before surgical closure, the size of the perforation, shock and recent ingestion of food were also studied for possible relationship with elevated serum amylase. All appeared to be statistical if not etiological associates of abnormal serum amylase levels.

Because high amylase values so often occur in perforated ulcer, there is no amylase level that can be considered diagnostic of acute pancreatitis.

SINCE THE INTRODUCTION of serum amylase determination as a diagnostic test for acute pancreatitis many additional disorders in which there may be increase in amylase levels have been cited.[8,9,15] It is well known that an abnormal rise in blood amylase may occur in gastroduodenal perforation. The problem of differential diagnosis between perforated peptic ulcer and acute pancreatitis is a commonly recurring one. Observations made while dealing with a group of patients with acute gastroduodenal perforations on whom serum amylase studies were done in the preoperative period are presented here in an effort to clarify the significance of such elevated serum amylase levels. Data were compiled on the relationship of elevated blood amylase levels to the general mortality, the amount of fluid in the abdominal cavity, the time, size and duration of the perforation and the presence of shock among 1,000 patients with perforated ulcer who were treated at the Los Angeles County General Hospital.

Enough experimental work has now been done to clarify the various causes of the increase in serum amylase in several of the clinical disorders in which increase may occur.[4,5,13,14] Some of the clinical conditions other than acute pancreatitis are listed in Table 1. These disorders can generally be classified as (1) primary disease in the pancreas itself; (2) diseases which appear to cause secondary pancreatitis by bringing about interference at the ampullary level; (3) renal insufficiency states; (4) diseases totally unrelated to the pancreas which cause a peripheral enzyme rise primarily by gastrointestinal leak.

In acute pancreatitis, in which enzyme levels are typically elevated, the mechanism of enzyme rise has been studied fairly accurately since pancreatitis can be produced in the laboratory. Egdahl recently contributed to the understanding of the transport of pancreatic fluid in pancreatitis and concluded that the early rise in serum amylase is due to the absorption of enzyme into the pancreatic venous blood as it is liberated from the gland itself and collects first within the capsule. Subsequently lymphatic absorption contributes to the peripheral blood enzyme rise. The peritoneal fluid transudate in clinical pancreatitis has been noted to be extremely high in amylase content. This finding has been used to advocate peritoneal tap in order to help confirm a diagnosis of pancreatitis.[7]

Of more importance clinically are the acute conditions listed in Table 1, D, which are associated with all ranges of serum amylase. All represent usually urgent intra-abdominal disorders that require surgical treatment. Acute gastroduodenal ulcer perforation is of particular interest because it can easily be confused with pancreatitis when serum amylase determinations are high. The mechanism for the production of hyperamylasemia in perforated ulcer appears to be by absorption through peritoneal surfaces of the amylase-rich fluid poured

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into the peritoneal cavity after the perforation. The pancreas itself is entirely passive and unaffected in these cases.

The fact that some patients with acute perforation have high serum amylase content while others do not has been studied by some observers in the past who drew conclusions based on only a few cases.* The large group of cases available for study at the Los Angeles County General Hospital and partially presented here can give a firmer basis for conclusions as to what factors tend to bring about elevated serum amylase levels in this disease.

General Mortality

Nearly two thousand cases with diagnosis of perforated ulcer were studied in order to find a thousand in which perforation was confirmed and in which serum amylase determinations had been done preoperatively. Also required was data on the size and duration of the perforation, the approximate amount of fluid spill, the time of day perforation occurred and the presence or absence of shock.

TABLE 1.—*Clinical Conditions That Are Associated with Elevated Serum Amylase*

A. Primary pancreatic (or salivary) disease	Acute pancreatitis Chronic pancreatitis (acute exacerbation) Pseudocyst of pancreas (mumps—salivary gland inflammation) Penetrating peptic ulcer
B. Conditions that probably produce their effect at the ampullary level	Carcinoma ampulla of Vater Carcinoma head of pancreas Common duct exploration Acute cholecystitis Common duct stone Postsphincterotomy Drug induced (morphine; codeine) Small bowel obstruction (simple; mechanical)
C. Abnormal renal excretion of enzyme	Chronic renal insufficiency Acute reversible renal failure Shock
D. Diseases that produce a gastrointestinal leak or exudate	Perforated peptic ulcer Mesenteric vascular occlusion Small bowel obstruction (strangulated; gangrenous)

TABLE 2.—*Amylase Values in 1,000 Cases of Perforated Peptic Ulcer*

Range (Units)	Cases	Deaths	Mortality Rate (Per Cent)
Up to 200	840	89	10.6
200 to 300	72	18	25.0
300 to 400	48	11	23.0
400 to 600	22	9	41.0
Over 600	18	13	73.3
	1.000	140	

840 (84%) normal amylase, 10.6% mortality
160 (16%) elevated amylase, 32% mortality

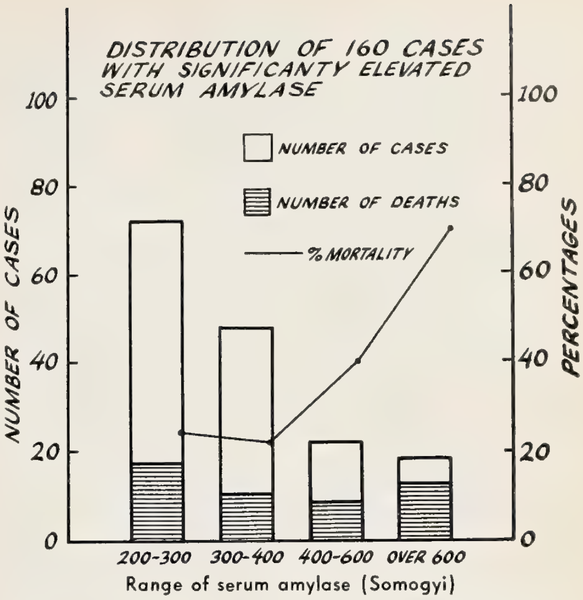

Chart 1.—Mortality rate related to serum amylase concentration.

At the Los Angeles County General Hospital the normal range for amylase in the peripheral blood is considered to be 80-150 units (Somogyi). In this study, in order to avoid inclusion of technical errors, the range of normal was considered to extend to 200 units. In 84 per cent of cases of perforated ulcer there was no abnormal content of serum amylase. The other 16 per cent of the patients had levels of 200 units or above. Eighty-eight patients had levels higher than 300 units and 18 higher than 600 units. These findings are summarized in Table 2, which also indicates the significantly increased mortality rate—32 per cent—in patients who had high serum amylase. The mortality rate for the 840 patients who had essentially normal serum amylase levels was 10.6 per cent.

The incidence of abnormally high amylase values was considerably higher in cases of gastric perforation than in cases of duodenal perforation. The mortality among patients with gastric perforation who had high amylase levels was 48 per cent.

Elevated Serum Amylase and Abdominal "Fluid Spill"

In the early stages after perforation much of the peritoneal fluid found in the abdominal cavity is made up of gastric and duodenal contents that have leaked through the perforation. In the later stages, particularly where there has been a good deal of chemical irritation, a certain amount of peritoneal exudation of fluid may occur to add to the amount of fluid found in the abdominal cavity. Many factors, such as the size and location of the perforation and the amount of fluid further ingested by the patient before closure of the perforation, affect this total fluid volume. An earlier study of perforated peptic ulcer at this hospital indicated that less than a fourth of patients with perforations that were less than eight hours old had large amounts of peritoneal fluid. Among patients with perforations that were between 16 and 24 hours old, the number with large amounts of peritoneal fluid doubled.[16]

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*References 1, 2, 3, 6, 10, 11, 17.

For purposes of analysis, cases in which the amount of fluid spill had been estimated by the surgeon were arbitrarily grouped in the categories *small*, *moderate*, *large* and *massive*. In general, the greater the fluid spill, the higher the mortality rate. The mortality in the group with large spill was double that in patients with small or moderate spill. In the group with massive spill, the mortality was 55 per cent. The rates were essentially the same whether the perforation was duodenal or gastric.

High amylase titers and large and massive amounts of abdominal fluid were statistically companionate (Table 3).

TABLE 3.—*Amylase Values in Relation to Amount of Fluid Spill in Perforated Peptic Ulcer*

Abdominal Fluid	Total Cases	Serum Amylase Normal	Serum Amylase Elevated	Per Cent with Elevation
Small	358	324	34	9.5
Moderate	327	288	39	11
Large	224	182	42	19
Massive	91	46	45	50
	1,000	840	160	

TABLE 4.—*Amylase Values in Relation to Duration of Perforation in Perforated Peptic Ulcer*

Duration Hours	Total Cases	Normal Amylase	Elevated Amylase	Per Cent with Elevation
0 to 8	347	302	45	14
8 to 16	431	370	61	
16 to 24	106	76	30	24
24 to 48	64	50	14	
Over 48	52	42	10	
	1,000	840	160	

TABLE 5.—*Amylase Values in Relation to Size of Perforation in Perforated Peptic Ulcer*

Size of Perforation	Total Cases	Normal Amylase	Elevated Amylase	Per Cent with Elevation
1 to 3 mm.	324	287	37	11
3 to 5 mm.	266	229	37	14
5 to 7 mm.	60	52	8	14
7 to 10 mm.	96	80	16	17
1 to 2 cm.	125	97	28	22
Over 2 cm.	42	29	13	30
	913	644	263	

Relation of Duration of Perforation to the Serum Amylase

In order to ascertain the influence of the length of time between the occurrence of ulcer perforation and the time of operative closure, arbitrary time divisions were set up and the patients divided into groups with normal serum amylase and those with levels above 200 units. A total of 778 patients had a duration of perforation less than 16 hours. In this group only 14 per cent had high amylase content. In the 222 patients with duration of perforation from 16 hours to over two days, the incidence of abnormally high amylase values increased to 24 per cent. (See Table 4.)

Size of Perforation in Serum Amylase Levels

The size of the perforation has prognostic significance, for the larger the perforation the higher the mortality rate. In cases of perforations over 1 cm. in diameter the mortality rate was approximately three times the rate for all cases of perforation.

A strong correlation of size of ulcer with amount of amylase was noted (Table 5). The correlation was not constant, however; in many cases in which perforations were 1.5 to 2 cm. in diameter, serum amylase levels were within normal limits.

Effect of Recent Ingestion of Food

Pemberton and co-workers[12] showed that perforations occurring in dogs shortly after food ingestion can be associated with the outpouring of duodenal fluid more rich in amylase and thus are more likely to cause an increase in serum amylase. It had been suggested by previous investigators,[10,16] commenting on the elevated serum amylase levels found in gastroduodenal perforation, that the increase was closely associated with recent food ingestion. Precise data were not available in the present study to permit accurate appraisal of the effect of recent eating. However, for purposes of gross comparison, patients in this series were divided into four groups according to the time of day that perforation occurred (Table 6). It was assumed that patients in whom perforation occurred during the daytime hours would probably have taken food more recently than those in whom it happened between 6 p.m. and 6 a.m. The incidence of perforation was higher during the daytime hours, but the incidence of serum amylase elevation was no higher in the daytime than in the nighttime group. This would suggest that food ingestion close to the time of perforation is not necessarily a factor in peripheral amylase rise. The majority of patients with gastroduodenal perforations do not have a rise in amylase levels regardless of this and other factors.

The Relationship of Shock to Amylase

Clear-cut clinical findings of shock of more than transient nature occurred preoperatively in 5 per cent of the patients studied. Included in the shock

TABLE 6.—*Amylase Values in Relation to Time of Day (as a Gauge of Recent Food Intake) in Perforated Peptic Ulcer*

Period of Day	Amylase Below 200 Units No.	Amylase Below 200 Units Per Cent	Amylase Over 200 Units No.	Amylase Over 200 Units Per Cent
6 a.m. to 12 noon	182	84	42	16
12 noon to 6 p.m.	288		47	
6 p.m. to 12 p.m.	209	84	35	16
12 p.m. to 6 a.m.	160		37	
	839		161	

TABLE 7.—*Amylase Values in Relation to Shock in Perforated Peptic Ulcer*

Amylase (Units)	Shock Absent	Shock Present	Per Cent with Shock
Below 200	844	42	55
Above 200	156	31	20

category were patients who had systolic pressure below 80 mm. of mercury and required blood or plasma or both to aid in stabilizing. The majority of them had transient oliguria and many had severe hemorrhage at the time of perforation. Preoperative shock was four times more frequent in the patients with high serum amylase than in those with amylase levels of 200 units or less (Table 7). In many of the patients with shock, the amylase level was well above 200 units—a level higher than might occur with acute renal failure superimposed on chronic renal insufficiency with elevated blood urea nitrogen. The mortality rate in the group with shock was over 50 per cent.

DISCUSSION

Elevated serum amylase levels in gastroduodenal perforations are of significance primarily because they confuse the picture which otherwise might be typical of perforation. Levels above normal may be seen in nearly one of every six patients who have had an open perforation. The size of the perforation, the amount of fluid accumulation within the abdominal cavity, the duration of perforation and the presence or absence of shock all seem to be factors which affect this rise in serum amylase content that occurs in some patients with perforated peptic ulcer. The rise is probably a result of increased liberation of pancreatic secretion into the peritoneal cavity and subsequent lymphatic absorption. Thus, a large amount of fluid and a generalized spill should be important factors in an increase in absorption. This supposition seems to be supported by the correlation in the present study of the higher incidence of elevated amylase in patients with large amounts of fluid and large perforations. The decided increase in mortality rate among patients having high amylase levels associated with perforations gives ominous significance to this combination. This combination is merely coincidental, however, since each of the factors that bring about increase in serum amylase is also a factor in increasing the mortality from perforated ulcer.

The factors of age and sex were not dealt with in detail in this analysis and yet both have potent influences on the outcome after perforation. The older patients frequently reach aid late. This adds factors of long duration, large fluid spill and often shock. In them the ulcers are often larger and often more numerous. Of further interest with regard to elderly patients are problems of severe associated diseases, reduced healing power and often a reduced diagnostic accuracy. The mortality rate associated with perforation of ulcers is twice as high for women as for men.

In the older age groups the diagnosis of perforated ulcer and the ruling out of pancreatitis becomes especially important and often especially difficult. There is no level of serum amylase which can be taken as a sure sign that the patient does not have a perforated peptic ulcer. The well known high incidence of alcoholism among perforated peptic ulcer patients makes it necessary always to keep in mind the possibility of perforation and acute pancreatitis occurring together. No doubt some of the patients studied here had pancreatitis that was not diagnosed, inasmuch as the pancreas is rarely examined during operation for perforation closure.

In cases in which perforation is suspected and serum amylase values are abnormally high but free subphrenic air cannot be demonstrated, the clinician should use other methods to determine whether perforation has occurred. One method of value is roentgen study with intragastric contrast media to search for a leak. Another is peritoneal tap. Typically the fluid from perforated ulcer is cloudy, may be bile-stained and may contain organisms. Fluid in pancreatitis is somewhat clearer and usually slightly serosanguinous. The fluid is almost unvariably alkaline in either case.

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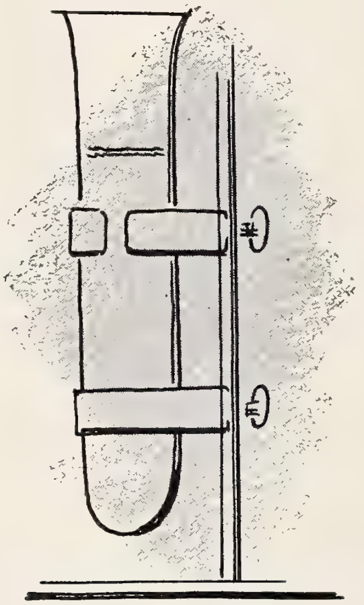

Cantharidin Treatment of Digital and Periungual Warts

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• Seventy-six digital and periungual warts in 40 patients were treated topically with cantharidin, a potent blistering agent. The material, dissolved in equal parts of acetone and collodion, was applied directly to the warts. Occlusion facilitated blistering. No pretreatment was required. The warts were re-treated at weekly intervals until clinically cured.

Fifty-six per cent of digital warts and 33 per cent of periungual warts cleared after a single application of cantharidin. Few required more than three treatments. Observation was continued for more than six months in more than half of the cases. Cure was lasting in about 70 per cent of the cases in which the long term result was known.

Cantharidin ranks with liquid nitrogen in effectiveness, but it is painless to apply and does not cause scarring. For these reasons it is especially useful in children.

The main disadvantage is pain and tenderness at the treated site for two to four days in some patients. This can be avoided by careful application of the drug. Occasionally new warts appear at the edge of the cantharidin blister. They are best treated by curettage and desiccation.

CANTHARIDIN, a potent blistering agent extracted from blister beetles, has been advocated for the local therapy of warts.[1] This study was designed to evaluate use of this form of therapy in a dermatologic practice. Preliminary data having suggested cantharidin would be most successful in the treatment of warts on the digits and those under or around the nails, the investigation was concentrated on such lesions.

Forty patients with 76 digital, periungual subungual warts were treated as previously suggested[1] by applying a small amount of 0.7 per cent cantharidin solution in equal parts acetone and flexible collodion* to the surface of the wart. When the solvent evaporated, the area was occluded with a small piece of plastic band-aid tape cut to just cover the wart. Finally, a loose protective bandage was put over the whole area. The patients were seen at weekly intervals and the lesions were debrided and re-treated if necessary. After the last treatment they were asked to return in a month. Further follow-up depended upon the patient. Each was instructed that recurrences may occur with any method of treatment and that what they had received was just another kind of therapy for warts.

Aside from effectiveness, the main points of evaluation were the ease of application and acceptance by the patient.

RESULTS

Complete disappearance of visible warts for three to four weeks is deemed a satisfactory clinical response. The results in this study were:

Type of Wart	No. of Warts	No. Clinically Cleared for 3 to 4 Weeks
Digital	61	57
Periungual and subungual	15	12

A single treatment cleared 32 of the 61 digital warts and 4 of the 12 periungual and subungual warts. The others generally required one or two additional treatments. In a few cases, prolonged therapy seemed indicated. Usually in these cases the warts were periungual, and they slowly but steadily disappeared. In one instance, nine treatments with cantharidin caused a long term cure.

A "long term cure" was defined as clinical clearing lasting 4 to 6 months. In this category the results were:

Type of Wart	No. of Warts	No. with Long Term Cure
Digital	45	32
Periungual and subungual	12	9

The incidence of recurrence appeared somewhat lower than that following most conventional means of therapy, except possibly curettage and desiccation.

Finally, 17 patients who obtained a long term cure were specifically questioned 12 to 18 months later. In this group, there was recurrence of only one of 29 digital warts and no recurrence of nine periungual warts.

DISCUSSION

Cantharidin proved a successful treatment for the types of warts selected. We also obtained good results in plantar warts (9 of 17 clearing) but the procedure was so frequently associated with a dis-

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*Cantharone®, Ingram Pharmaceutical Co., San Francisco.

tressing pain deep in the foot that we stopped using it. Nine plain warts situated on the arms and trunk were not affected by cantharidin treatment; and because of previous advice[1] no mosaic or acuminate warts were treated.

Certain advantages of cantharidin can be cited. It is easily and rapidly applied. No pretreatment is required. The solution effectively spreads under nails and into crevices of the nail fold and proper bandaging on the digits is facilitated. Treatment is well received by the patient. As it is painless at the time of application, children and squeamish adults are at once relieved and rapport is established. Scarring is not a sequela to cantharidin blisters, which are caused by rupture of the intercellular bridges between epidermal cells.[3]

The main disadvantage is pain and tenderness in the treated area coming on after about 24 hours and lasting usually two to four days. This discomfort occurs with all forms of destructive therapy. Although the pain does not occur immediately, it may last longer than after liquid nitrogen application or electrodesiccation. About half of the patients noted some distress. Six felt it was severe, but it was relieved by opening the blister and compressing the area. We learned how to avoid this complication. In the first place, some patients are very sensitive to the action of cantharidin. Within a few hours of application they feel a tingling or burning at the treated site. Normally a large blister will form which can be very annoying, but if the outer protective bandage is removed shortly after symptoms begin, the blister is much smaller, and the pain less. The other cause of painful lesions is use of too much cantharidin. Large amounts of this potent blistering agent are not needed for large succulent warts. A thin film spread over the wart and properly occluded to aid penetration will suffice.

The necessity of retaining the original bandage in place for a few days may present a problem. Patients whose hands are frequently in water find it a hardship. Treating one hand at a time may help.

Another untoward reaction is the recurrence of wart in the bulla margin, forming a doughnut-shaped tumor,[1, 2] which may be quite alarming in appearance. This occurred in two cases, involving two of three treated sites, in the present series. We have adopted curettage and desiccation as routine for the treatment of this unique complication, although it may be controlled by further use of cantharidin.

"Cures" for warts are legion. Psychotherapy works in some cases, and may add to the effectiveness of all therapies. But it is also true that destructive treatment is the most rapid and successful. Liquid nitrogen and curettage and desiccation have become standard methods. Cantharidin is less painful than either of these. It is at least as effective as liquid nitrogen and, generally, is more available. Furthermore, there is no danger of scarring. Perhaps curettage and desiccation is more effective, but it is poorly received by many patients, and it is unselectively destructive. The lytic action of cantharidin does not go beyond the epidermal cells, the site of the wart virus infection. If cantharidin treatment fails, it has done nothing that would prevent the use of other means of therapy.

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Psychic Structure and Function

Some Concepts Useful in Dealing with Patients

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• Human behavior, "healthy" or "sick," is enormously complex. It is influenced by a great number of variables. The brain is the ultimate organ of psychic structure, and increasing knowledge of the brain should eventually clarify the manner in which various factors do affect our behavior. As yet, however, we do not have an adequate scheme of brain structure and function which we know how to use effectively in the formulation of behavior.

For theoretical and clinical purposes the psychoanalytic concept of psychic structure and function has been highly useful in interpreting the complex data of behavior and in guiding therapeutic effort. It covers in a comprehensive way the multiple determinants of behavior . . . deriving from biological heritage, states and drives (*id*), the influences of past experience, especially those reflecting the demanding and prohibitive attitudes of parental figures (*superego*), the pressures of external reality and those processes integrating these various influences into adaptive and defensive behavior (*ego*). The psychic structure goes through a long and arduous process of development. Uneven development with weakness, rigidity and lack of integration is manifest in psychopathologic states. Psychological health is present to the extent that there is balanced development of the psychic structures favorable to growth, development and stability. In the presence of psychopathologic change, the therapeutic task is to restore or develop strength, flexibility and coordination of the psychic structures to a level at which they are capable of dealing with reality.

A PHYSICIAN'S ATTEMPT to help an emotionally disturbed person will be more effective if it is based on a recognition of the complexity of human behavior, a knowledge of psychic structure and function, some understanding of psychopathology and a general idea about psychological health. These topics will be discussed in order, the second in detail because it is most basic.

COMPLEXITY OF HUMAN BEHAVIOR

Human behavior is enormously complex. Any psychological event can be shown to have multiple determinants in the present, the past and the anticipated future. Nothing an individual feels, thinks or does can be wholly understood in terms of any simple influence. Behavior is the resultant of converging influences from within the individual and from the external world. Within him are his biological needs: his needs for food, shelter, warmth, human contact, activity and rest, sexual gratification, and reproduction. There are the guiding and restraining influences of his habits, memories, concepts, expectations, wishes and fears. Finally, everyone is affected in some way by people, things, places and conditions surrounding him—by the culture to which he belongs. Such complexities make understandable the many different ways of looking at an individual's psychology.

As physicians we are interested in health and disease. Our interest requires us to be realistic, to avoid oversimplification and yet not be overwhelmed by the complexity of the problems that face us. Nor do we want to render ourselves ineffective by looking away from emotional problems. In the presence of such complex phenomena, how can we as physicians come to any agreement on what is important—on what is healthy and what is not? Or even granted that something is wrong with one's self or his patient, how can we predict what would be better? How can we bring about a desired change? Where in the vast array of facts can we focus our attention and efforts to achieve understanding and deal effectively with emotional problems? Can it be done at all?

With qualifications, the answer is *yes*. But how are we to recognize what things are most central and important, and then to direct our efforts toward them?

A fact that we can all observe in ourselves may simplify our efforts to understand and deal effectively with an individual's behavior. The fact is this: *The individual's behavior always bears the imprint of the individual's own characteristics*. It may or may not be significantly shaped by the situation to which he is reacting. Given the same situation, one person may be overwhelmed, another may be paralyzed, and a third may be challenged to effective effort. Each person reacts with his own psyche in

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accordance with its characteristics of strength and coordination. His psyche is a constant central factor in his behavior; whereas all other factors, however important, vary in significance and affect his emotions and behavior only as they act upon and through his psyche.

This concept of the psyche as a constant central factor in behavior is the crucial starting point of modern dynamic psychiatry. It provides the basis upon which, out of the vast and otherwise bewildering array of facts about human behavior, we can organize our understanding and efforts.

PSYCHIC STRUCTURE AND FUNCTION

The psyche, by way of its underlying organ, the brain, is governed by its own operating principles. It is influenced by conditions within the body as well as complex configurations of phenomena in the outside world. These can be traced in the slow process of development.

Development from undifferentiated state. At birth the individual's psychic functions exist in an extremely rudimentary state—for example, the infant's chaotic mass reactions to any stimulus; and his lack of control over muscular movements, sphincter action, perception. The very sounds he makes are the same for all normal babies, to begin with. Only later do his speech sounds narrow down to those used by people about him. The child's electroencephalogram further reflects lack of differentiation, and years of development are necessary before it resembles that of the adult, except in sleep.

Differentiation of the child's psyche—a slow process, much of which takes place during the first five years—develops as a product of the child's activity, his inner feelings and outer stimuli. Inner feelings are hunger, pain, bladder and bowel pressure, fatigue, sleepiness and the like. The important outer stimuli are the human beings and objects with which the infant becomes familiar.

Differentiation, of course, proceeds gradually and in stages. The achievements and failures of one stage influence the later ones. Relatively organized activity is first centered around the mouth. Subsequently, controlling activity develops with respect to the bowels and bladder, walking, talking, establishment of human relationships, and awakening of primitive unorganized sexual activity. Not in all the rest of his life does an individual have to learn so many basic skills in so short a period as he must within the first five years.

This course of differentiation is never a smooth one. Inevitably the child will suffer conflict; the sources may be internal or external. Inner conflicts arise from opposing desires within himself; conflicts may also arise around the objects and people of his environment as they oppose his desires. These conflicts and the manner in which the child learns to manage them, significantly influence the course of his development. They provide the basis upon which to develop strength and coordination. But if difficult conflicts confront him before he has developed the strength to handle them, he may be overwhelmed by them and his psychological development may be retarded. Fixation may occur in each stage around the specific modes of thinking, feeling and acting that characterize it, when an individual fails or is so frustrated that it is difficult to develop further. Fixation may also occur with gratification so excessive as to lessen the impetus to move on.

These considerations about development point up some sources of individual differences. Every individual is born with his own hereditary traits and is exposed to different life experiences. The differences may be subtle and seemingly trivial to the adult observer but profoundly significant for the child. Not only do experiences differ, but the timing of important ones varies for each individual. Thus the effect of an experience upon a child is related not only to the characteristics of that experience, but, just as importantly, to his stage of development when he first has the experience.

As the child develops, then, the strengths and weaknesses and outlines of his personality begin to take form and shape in relationship to his early experiences, their timing, and his reactions to them. They tend to set the direction, limitations and potentialities of his mind and emotions for the rest of his life. We remember the stanza by Walter de la Mare which refers to the body but applies equally to the psyche.

> *"It's a very odd thing,*
> *As odd as can be*
> *That whatever Miss T. eats*
> *Turns into Miss T."*

Psychic structure. Although the organ of the psyche is almost certainly the brain, no simple comprehensive schema of it has been evolved as a basis to formulate total individual behavior. An unanatomical type of schema—which developed out of the experience of psychoanalysis—represents four major categories of functions and forces that help determine behavior, symbolized as id, superego, ego and external reality. It can be extremely useful for clinical purposes.

The *id* symbolizes those processes and influences that come from the biological characteristics of the individual—his needs for oxygen, food, warmth, stimulation and sex. These biological drives press actively for gratification and discharge, or may lie relatively quiescent. Often they conflict severely with the superego and with the conditions of external reality.

The *superego* represents the imprint of parental and other influences of early childhood; those that have been most intense, prolonged, and repeated, usually in the context of conflict with the parent over parental demands, restrictions and criticisms. The superego therefore represents the imprint of the most severe, hostile and relentless attitudes of the parent, and may actually be a severe distortion of what the parents were in reality. It comes to serve as a parental surrogate. A powerful superego is manifest in the adult when an individual is overwhelmed repeatedly by a compulsion to please; by ever-present feelings of guilt and inadequacy, despite all realistic considerations.

External reality is enormously complex. With its opportunities, limitations and dangers, it poses for the individual the necessity of complex ever-continuing adjustments if he is to find satisfaction and preserve himself.

The *ego* consists of those functions which, with various degrees of success, reconcile the many pressures coming from the id, superego and reality. Obviously, the stronger the ego functions, the more readily the ego can accomplish its tasks. Inordinate pressures from the id, from the superego or from external reality may render the task of the ego extremely difficult; and it may be overwhelmed, as in psychosis. A person's capacity for growth, development, self-preservation and gratification will depend largely upon the strength of his ego functions.

Ego functions. Some of the elemental ego functions—perception, memory, association, motility—are very complex and interdependent. What one sees, for instance, is influenced by what he remembers, wishes, anticipates and by his concepts as well as by his motor activity. What he thinks is supplied by perceptual data, memory; and is directed by his wishes, tested and reinforced by his motility. Here, a few words about perception and motility, functions essential to human contact and communication, must suffice.

Perceptual activity—responsive in various degrees to sensory phenomena and to ideational and affective phenomena—has three facets. We perceive the external world, our thoughts, and our feelings. All perceptual activity is important in the orientation and direction of the psychic apparatus, but sensory perception is particularly important to the individual both for orientation and the nonspecific excitation which it provides. Its determinants include not only the intensity and quality of the stimulus, but also the individual's physiological status, motility and ideational processes. An objective measure is not easy; but even casual observation discloses individual differences in the quality and intensity of what is seen. Every individual has patterns of perceptual activity highly characteristic for himself. Further it is significant that people vary in their ability to differentiate their perceptions of what is internal, what external. For instance, a psychotic patient may have very great difficulty in differentiating between what he sees and what he thinks. All of us can probably recall dreams vivid enough to give the illusion of "being real."

Motility, as determined in the psychic apparatus, is directed toward the skeletal musculature, visceral and vasomotor systems, and toward the speech apparatus. Motility is an essential function in perception, nutrition and communication, and in the discharge of central excitation. If it is blocked, ideations and affective reactions usually increase, at least for a time.

Complex ego functions. The elemental ego functions are never seen in pure form. Rather, they exist in combinations of varied complexity and composition. Judgment and intelligence are examples of the many such complex functions, and they will reflect any deficiency in the more elemental ego functions.

The complex ego functions may be considered as adaptive and defensive. Adaptive reactions must be flexible and easily accessible to consciousness if they are to meet suitably the ever-changing conditions of internal and external reality. Defensive reactions, on the other hand, take place automatically and outside of awareness. Originally specific for repeated and intense traumatic situations, they become persistent and reactive to more or less nonspecific situations. They diminish awareness of influences from the id, the superego and the external world, but thereby use up psychic energy and so reduce the energy available for more constructive functions. The major defenses include repression, displacement, reaction formation, projection, denial, isolation, avoidance.

To give a simple illustration: The individual faced with a difficult, disturbing task may tend, even without being aware of doing so, to close his eyes to it. He may avoid it in different ways: by turning his attention to something else, or by convincing himself that the task is someone else's responsibility. But the avoidance, besides costing considerable expenditure of energy, will prevent satisfactory performance of the task and the skill and mastery to be derived from the experience.

OPERATING PRINCIPLES AND CONDITIONS OF MENTAL FUNCTIONING

The psychic structure is influenced by multiple determinants. Among these are objects, people and events of external reality, but they are never sole influences.

The psychic apparatus works as a whole. Complexes of functions may act in concert with one another, or they may conflict with one another. The various ego functions are subject to inhibition as well as to excitation. Optimal operation of any function occurs in a range that will be determined by the level of other activities; on either side of this range there will be a breakdown in the efficiency of the function.

The strength, coordination, and flexibility of the ego functions depend upon continued reinforcement and activity. In the absence of supply and activity, in the presence of obstructions, such as the defense processes, there will be a corresponding loss of strength, coordination and flexibility.

A concept of energy is indispensable for understanding psychological functions. Implicit in the observation of the psyche's capacity to scan, focus, displace, project, and so on, is the concept of energy. Casual observation shows that individuals vary greatly in the efficiency and economy with which psychic energy is utilized. All the defense functions use up energy in highly wasteful inner conflicts.

Conscious and unconscious processes. Any adequate attempt to understand behavior requires a consideration of unconscious processes. An individual can be aware of only a few of the multiple influences that determine his behavior. Broadly speaking, three categories of more or less unconscious activity influence all aspects of behavior.

One category consists of *biological events* which never have direct access to consciousness. We cannot, for instance, be directly aware of the chemical changes that take place in the retina upon exposure to light, but only aware of the effects of such changes. Biological drives, by and large, are experienced in terms of affect, thought, sensation. They are experienced in consciousness only in derivative form.

Mental events occurring outside the focus of attention may not appear in consciousness, but may have ready access to it. These are said to be *preconscious.* Access to consciousness is likely if the charge of excitation carried by an event increases or if the event links with something in consciousness.

Repressed unconscious. From the standpoint of psychopathology and psychotherapy, the most important category of unconscious activity is the so-called *repressed unconscious*, whose processes may be thought of as primary and secondary. Primary repression occurs almost always in childhood, associated with a series of traumatic events. The traumatic events are associated with extreme degrees of excitation, favoring a kind of short-circuiting in the psychic apparatus that by-passes the perceptual system. The excitatory impulses are diverted from the specific areas of the perceptual system related to their sensory origin and are short-circuited to other parts of the perceptual system or to various parts of the motility systems. The clinical manifestation will depend upon what part of the perceptual system is by-passed and to which systems the impulses are diverted. When a short-circuit of this sort becomes persistent, conditions are favorable to *secondary repression.* Any later event resembling that which brought about the primal repression is likely to be similarly short-circuited. If so, the repression will be manifest in blind spots and in various qualities of motor activity which cannot be adequately understood in terms of the perceptual system content.

The experiences of feeling, thought and fact that are liable to bring a child into conflict and thus arouse excitation beyond what he can readily assimilate are those pertaining to sexuality and aggressiveness. To a large extent, then, the content of the repressed unconscious is most likely to pertain to sex or aggressiveness, and experiences having to do with sex or aggressiveness are likely to be short-circuited or repressed into the unconscious of the adult as well as of the child. Being unconscious, they remain inaccessible to awareness and modification. They retain an almost autonomous control over certain aspects of the perceptual, motor and mental systems.

When such phenomena gain partial access to consciousness, they are experienced as extremely threatening. The defenses set up to keep them out of consciousness consume energy, and psychic functioning is weakened and distorted. Repression provides the basis for displacement, undue emphasis, projection and many other distortions. The total result is constriction and limitation involving the entire personality.

Continuity and repetition in human behavior. "Man is a creature of habit." Some repetitiveness and constancy are readily evident in the behavior of every individual. A greater degree is apparent when one looks closely at what the individual himself brings in the form of feelings, thoughts and actions to any situation he meets.

Probably many factors contribute to repetitive behavior. It is rooted in biology. Unconscious processes, being inaccessible to change and modification under the influence of perceptual processes, tend to become repetitive. Often repeated experiences leave deeply ingrained memory processes which will be repetitive when activated. Repetitive experience, in turn, tends to become unconscious and inaccessible to modification.

Repetitive behavior is neither good nor bad, *per se.* It may help provide the basis for economic expenditure of energy. On the other hand, it is often deleterious and destructive, especially when it occurs irrespective of the individual's needs or the demands of reality, and thereby precludes his flexible adjustment to the changing demands of the outer and inner worlds.

Repetitive and constant behavior, especially when it is of such a character as to be deleterious and destructive to the individual, presents the most formidable problems facing any attempt at psychotherapy. It is inaccessible to logic and persuasion. The individual clings to it despite all the resultant damage and suffering. Experience indicates that repetitive behavior, like posture, can be modified only with prolonged, tedious, appropriately designed hard work.

As explained, the patterns of feeling, thought and action established in childhood and reinforced through the later years, acquire the greatest persistence. They affect behavior, but being unconscious they remain unmodified by experience. Thus they always exert some continuing influence on the individual. If the individual is active and awake, their influence may be minimal. But if the external situation is relatively unchanging or resembles those situations which led to the original development of the deeply ingrained repetitive patterns, thus reinforcing them, it will become a dominant influence over the individual's behavior. He will then display many aspects of behavior which characterized him as a child. Here we have the basis for what is termed the "transference reaction."

The transference reaction is one in which the individual transfers onto someone in the present the feelings and guardedness he originally felt toward important persons in his childhood. A person may have many different transference reactions. They may be experienced in reference to the same and different persons.

The transference reaction may emerge into especial prominence in any long-continued relationship between two individuals characterized by some dependency of one upon the other. Thus it is especially likely to develop in the long-continued physician-patient relationship, in which the relative helplessness and dependency of the patient resembles situations in his childhood with important adults. Although the physician's position is somewhat different, he, too, may begin to experience feelings toward the patient similar to those he felt toward important persons in his childhood.

The transference reaction represents an aspect of the "repetition compulsion." Because it stems from experience and attitudes of the past and exists quite separately from current reality, it is fundamentally unrealistic and irrational. Yet the fact that it is experienced in terms of current reality may obscure its real nature. Therefore at all times in the physician-patient relationship, it is important to consider that the unrealistic, irrational loves, hates, demands, disappointments and magical expectations have a transference origin. By learning to recognize them as such, one can avoid reacting to them as if they were currently realistic. To react otherwise is to reinforce regression and thereby promote a further return into childhood with the associated deterioration of psychological function. A favorite precept in psychiatry is "No collusion with delusion."

PSYCHOPATHOLOGY

Besides the concept of psychic structure and function, the two groups of phenomena essential to any formulation of psychopathology are psychic trauma and anxiety.

Psychic trauma may be roughly defined as any shift of excitation in amount or quality which is beyond the ego's capacity to assimilate and master. Such change in quantity or configuration of excitation may result from external or internal stimulation or withdrawal of stimulation. Psychic trauma represents an effect of a change upon the ego. The traumatic quality is not a property of either ego or stimulus but of their interaction. A weak ego is constantly subject to trauma, no matter how minimal the disturbing influence. A strong ego may be traumatized only by more severe disruptions. A person with a weak ego may be overwhelmed by a situation, whereas an individual with a stronger ego may be able to utilize the same situation in an aggressive, constructive manner.

Anxiety represents a disturbance in the distribution and equilibrium of psychic energy. Every living being always has some anxiety, which represents the innate instability of living matter. Anxiety of appropriate degrees forms the basis for motivation and striving. Too much anxiety represents more profound dislocations and may be accompanied by varied degrees of functional deterioration. Anxiety that results from instability and change often signals psychic trauma.

A psychopathologic state, considered in terms of structure and function of the psychic apparatus and its various principles and conditions, can be described as any state wherein the strength, coordination and flexibility of ego functions are insufficient to reconcile the demands of id, superego and external reality. The essence of psychopathology lies in the conflict arising between various demands of the id, superego and reality, and in the relative weakness of ego functions. Sometimes these inadequacies of ego functions may result from exhaustion. More often they are a result of defective development. Fixations, inactivity and dominance of defensive activity all interfere with healthy development.

A psychopathologic state may be acute or chronic. It may represent the reaction of the ego when it has been exposed to extreme stress, before it has been able to reestablish its equilibrium. More often than not, what appears to be acute psychopathologic change represents a relatively weak ego unable to meet new demands placed upon it. If the individual has led a relatively quiet or secluded existence, the strength of his ego may never have been tested, its weaknesses never disclosed.

The complicated psychic apparatus offers many potential sites of psychopathologic development. Weakness or lack of organization anywhere will affect the entire individual. The particular clinical manifestations depend upon the structures and functions most severely involved. The variations of psychopathologic change are as numerous as are individuals.

PSYCHOLOGICAL HEALTH

Now for a brief statement about psychological health. Remember that the psychic structure and its functions are numerous and complicated, go through a long period of development and are influenced by a great number of factors. It is little wonder that fixations, conflicts, weakness and other unevennesses develop in each of us. It is more to be wondered how we come out as well as we do.

Perhaps we can draw from other medical experience and regard psychological health as that state of an individual in which his psychic structures and functions have developed the degree of strength, flexibility and coordination required for acting in concert with one another; and they do so. Once achieved, such a state of health must be maintained by adequate supplies and varied activity.

To the degree that such health is achieved and maintained, the individual can enjoy a sense of well-being and a high degree of effectiveness in living and working and playing with other people.

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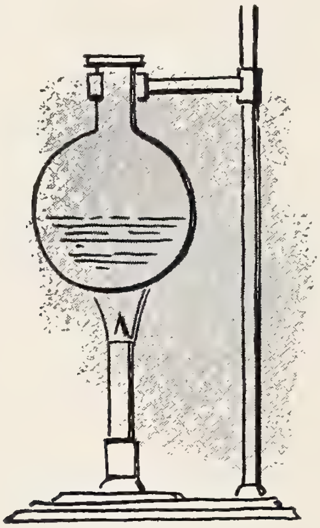

The Psychotherapeutic Approach to Emotional Problems

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Most conscientious physicians probably come to recognize sooner or later that a sizable portion of their practice, perhaps as high as 40 to 60 per cent of it, is made up of psychological problems and complaints either emotional in origin or complicated by emotional conflict. For many patients, referral to a psychiatrist is not feasible, either medically or economically. Psychiatric care is expensive, hard to obtain and often does not get the expected results. Some patients will go to a psychiatrist only under duress, and others should go only for evaluation. Yet for the physician to handle these emotional conditions by himself is often most frustrating. He may not have the inclination or the confidence to do so. But today most physicians, irrespective of their preferences, have to do psychotherapy—for better or worse.

Each physician evolves, by experience, ways of dealing with emotionally complicated cases, the way depending on the case in question and the physician's own personality, bias, conflicts and needs. Not proposing that all physicians suddenly become skilled psychotherapists, I would, however, reemphasize a healthy respect for the complexities of the human mind and personality. Major psychological problems and major personality changes must be left to the thoroughly trained psychotherapist. But I want to spell out the kinds of psychotherapy that physicians in general may comfortably do (and are doubtless doing) and the tools available for psychotherapy in medical practice, along with some of the limitations.

What is psychotherapy? The following definition comes from Wolberg[2]: "Psychotherapy is a form of *treatment* for *problems* of an *emotional* nature, in which a *trained* person *deliberately* establishes a *professional* relationship with a patient for the purpose of *modifying* or *influencing* that problem in a *positive* way." The italicized elements in this definition point up factors in the concept of psychotherapy.

The essence of psychotherapy is in the physician-patient relationship, whose essential currency of exchange is "talk." The physician talks to the patient, and the patient talks to the physician. As a rule the patient does much more of the talking; and this seems to enhance the therapeutic value of the interchange. But how does psychotherapy work? What makes it operate? How can talking make the patient feel better?

• Physicians are confronted with more and more psychological problems in their daily practice. Not only must a physician be able to recognize the problems, he must also be prepared to treat a certain number of them. Some of the patients will improve just because of a good relationship with the physician. Others will require more definitive, yet comparatively simple, psychotherapy. On the other hand, some patients with clear-cut emotional problems are best treated by the physician's traditional medical approach rather than by some type of "formal" psychotherapy. In some circumstances psychotherapeutic efforts may be damaging.

Each of us has experienced the benefits of talking, objectively as a professional listener, and subjectively as a human being who has "gotten it off his chest." Numerous anecdotes involve some patient who talks and talks and talks for time without end, never letting the physician edge in a word, and then ends his monologue with obvious relief and gratitude. He tells you how much better he feels, how you have made him feel better; and he is quite correct. No doubt he will tell his friends what a brilliant physician you are; how you were immediately able to find out what his trouble was and to treat him for it. But this is no constant, universal phenomenon. It does not happen with everyone, every time. Part of this beneficial result—this "feeling better"—relates to just having a listener who acts as if what is said is important. Part is due to the transference element in the patient-physician relationship in psychotherapy.

THE TRANSFERENCE IN PSYCHOTHERAPY

A patient who comes to a physician has already transferred to the physician certain attitudes and feelings from his past life, from previous experiences and relations with significant people. The patient sees the physician in various terms—not just what the physician is and does here and now, but how he, the patient, is related to other physicians,

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perhaps those from his childhood, with childhood's fears of physicians, sickness and pain; and how he, the patient, is related to such other authority figures as father, mother, grandparents, teachers, older brothers and sisters, playmates, corner policemen, and so on. That is, the patient's experiences with all these figures influence and distort his image of the current physician, with whom he tends to act not as he is now, but as he was then in relation to these significant figures. He will see himself not as a mature, responsible adult, but as a frightened, bewildered child. He will expect the same kind of magic he expected from his mother, who omnipotently kissed away the hurt of the bruised hand. He will look for the same kind of censure and punishment from the physician that he anticipated from his father when he had done wrong, for many an adult patient who appears quite logical, unconsciously thinks of his illness as evidence of some transgression or punishment for a transgression. Thus much of the power in the patient-physician relationship springs from a preformed transference with which the patient enters the physician's consulting room.

Think for a moment of the uniqueness of the physician's relationship with a patient. We examine him, take a history, do some laboratory tests, order some x-ray studies, and then announce that next Thursday he must have a portion of his stomach removed. So this patient reports to the hospital and docilely permits us to cut open his abdomen and remove a portion of his vital organs. Truly this sounds like the irrational behavior of a helpless, frightened child, blindly following the dictates of a mother who promises that everything "is going to be all right."

This is the power of the transference. Although it can be abused, it can also be used for constructive therapeutic purposes. Because of its nature, the patient looks for many things in the physician's office. And usually he finds there the particular thing he needs. As Anna Freud recently pointed out, the patient chooses from the "bill of fare" whatever he wants, and this choice may involve little of what the physician feels he is providing. These "transference gratifications" may be extremely helpful, therapeutic and reassuring. They may not be curative in the sense of abolishing unconscious conflicts, but unquestionably they help a patient in need. A few clinical examples may illustrate this basic point.

Some patients are comfortable only with a physician who is obviously concerned. To them the calm, detached, casual physician is intolerable. For example, consider a patient whose mother was attentive to his needs only when he was sick, but otherwise tended to ignore and neglect him. To his physicians therefore, he unconsciously exaggerated and dramatized his symptoms. When the physician responded with concern, the patient was content and satisfied; he then felt safe and protected. If he could not evoke such a response, he became anxious and angry—and usually sought another physician. It is clear that the family physician who referred this patient for psychiatric care was handling the case in a helpful, constructive way by showing proper concern and solicitude. This physician's attitude was therapeutic, even though he did not explore or attempt to discuss the nature or the background of the patient's psychological problems and behavior. He could intuitively utilize the patient's problems and effect a transference cure by permitting a good deal of gratification in this transference.

My second example involves a kind of psychotherapeutic benefit often unrecognized: The patient gets better because he has proved that the physician is really no good. A young woman went from doctor to doctor with two groups of symptoms. One group had to do with feelings of anxiety and tension, the other with a wide variety of somatic complaints that varied with the time and the physician. Although her psychological symptoms disturbed her most, she could manage to direct her physician's attention to an endless array of somatic complaints. The examinations produced no tangible results; the cause of her complaints could not be definitely established. Once the doctor would admit that he could do nothing more, the patient miraculously changed. Her tensions disappeared; she was resigned, no longer concerned about her symptoms; and for a period of several years she would enjoy relatively good health, until the old cycle started all over again.

Evidently this woman's unconscious need to prove her parents wrong was transferred onto the physicians. When she could demonstrate that they were unable to help her, and could get them to admit that they were unable, then this underlying wish was gratified, and a marked degree of symptomatic improvement occurred.

These clinical vignettes have several things in common: The patients improved; they were dealt with by physicians other than a psychiatrist; the improvement was not because of any probing by the physician or uncovering of any of the patient's childhood conflicts or broadening of the patient's understanding. These patients got better because some particular childhood need was gratified in the transference. What we may call "silent transference cures" are thus effected without the physician's active intervention. The physician offers the patient not interpretations or suggestions, but himself as an object from the past and permits himself to be so used by the patient's Unconscious.

But silent psychotherapy will not meet the needs of all patients. For those whose needs are not thus met, certain techniques of psychotherapy are available; and these I have deliberately condensed and simplified from Bibring's classic article, "Psychoanalysis and the Dynamic Psychotherapies."[1] The five basic technical principles used by the psychotherapist in his work with patients, although not sharply differentiated in practice, are best discussed as discrete rather than as overlapping principles. These techniques are: (1) suggestion; (2) abreaction; (3) manipulation; (4) clarification; (5) interpretation.

Suggestion refers to the induction by the therapist of various ideas, thoughts and feelings in the patient, not on the basis of the patient's logical or critical acceptance of these ideas, thoughts or feelings, but rather through the therapist's authoritative position. Suggestion, usually in conjunction with other techniques, obviously exploits the transference aspects of the physician-patient relationship and has the drawback that its benefits rarely outlast the relationship between the physician and the patient. We use suggestion to encourage the patient to face his problems, to tolerate pain and anxiety, to see his own irrational behavior. We may apply suggestion directly to overcoming specific symptoms. Telling a patient that he will be able to handle a particularly difficult life situation is also suggesting that he ought to handle it in a particular way. Almost we command him to do so, and the patient often experiences the remarks in precisely this way.

Abreaction refers to the discharge of certain emotional pressures and tensions. It is an integral part of the patient's talking to us—a kind of catharsis we encourage. The goal is the relief of emotional pressure and tension, so that the patient may be better able to handle the problems behind the pressure. In acute traumatic situations, abreaction may be extremely effective and of sufficient value to to bring about improvement or cure. For instance, certain hysterical patients come "all wrought up" because of tension mobilized by a particular situation or conflict. The opportunity for them to ventilate their feelings reduces the pressure and may produce a reasonable psychological equilibrium. Without eliminating the basic conflict, this device does help the patient regain a functioning level—a gain not to be disparaged.

Manipulation, to Bibring, means utilizing the various "emotional systems" in the patient to promote therapeutic change. The use of "emotional systems" existing in the patient involves not only the positive transference of patient to physician, but depends largely on the physician's recognizing a specific emotional problem in the patient and so reacting as to be therapeutically beneficial and to produce some psychological shift in the patient. Running a patient's life and using such manipulations as advice and guidance are dismissed as "crude."

A somewhat hypothetical case illustrates this point. A man who is tense, with some mild somatization reactions, quickly makes plain that he is involved in a struggle with an authoritative employer. You find that he has always had difficulty with authority figures, toward whom he habitually behaves in a most submissive way—a pattern that produces shame and anger, which in turn cause some anxiety and somatization. These all relate to his earliest experiences with his father and are the main elements of a clinical situation with which physicians must cope almost daily.

One therapeutic device that can be brought to bear is a specific kind of manipulation—not the crude manipulation of telling the patient to change jobs, to seek out some mild-mannered employer whom he could flout with impunity. I have in mind something more ambitious and yet not outside the province of physicians. The physician in his dealings with this patient can demonstrate that there are alternate ways of reacting to an authority figure other than that of blind submission. The physician can encourage the patient to discuss things freely, to ask questions, to disagree, to speak his mind, even to assert himself. This may produce a change in the patient through the rearrangement of some of his psychological patterns and permit him to handle situations with authority figures much more constructively. Although related to what I earlier called "silent transference cure," it differs in that this kind of manipulation depends on the physician's actually behaving and acting in a specific way and treating his patient in a specific manner, and not just on those fantasies that the patient has about the physician.

Clearly this mechanism will be more effective when combined with the technique of clarification. That is, explaining the patient's behavior and some of the more obvious sources of his problem will enlarge the chances for effecting a positive result.

Clarification, along with the technique of interpretation, is a device intended to produce insight in the patient. *Interpretation* aims at making conscious what is unconscious. Together they aim at extending the area of the patient's self-awareness and self-understanding. Clarification, basically, helps the patient to see things more clearly and to understand his fears, conflicts, patterns of behavior and relationships with other people. Material of which the patient has already become aware is clarified, organized and interrelated. The vague and remote material is brought to his acute attention, with the expectation that he will have better control of his feelings and thoughts, will achieve some feeling of mastery over his conflicts, and can better utilize his conscious psychological resources.

Thus we may point out to our hypothetical patient that his tension is related to the anger he feels when he has to submit to his employer's demands that he considers unreasonable. To a young woman who constantly becomes involved in unhealthy and unsatisfactory sexual situations we point out that her so-called sexual compliance is related to her need for love and affection. Or a hot-headed young man may come to see that his angry explosions always occur in relation to his own feelings of guilt which he displaces onto another person or object. These are superficial, uncomplicated examples and deal with material which is entirely conscious or very close to the surface of consciousness.

Interpretation is a specialized technique aimed at the uncovering of unconscious material, conflicts and feelings. It is utilized by those who are specifically trained in these techniques and therefore is not further discussed.

USE OF THE TECHNIQUES

Rarely is any one of the various technical devices that I have described used in unadulterated form. In practice, psychotherapeutic work mostly involves a combination—sometimes all of them simultaneously, albeit in quite different proportions.

In the hypothetical case of the man with the tension and somatization reaction, we might utilize all these devices. We would use suggestion to "suggest" that he examine his feelings and conflicts and consider more mature and effective ways of dealing with them. We would use abreaction in the sense of both permitting and facilitating the ventilation of his feelings toward his employer and other authority figures—perhaps even his physician. We would use manipulation by so treating this patient as to bring into focus his conflicts with authority figures, and by demonstrating in our own behavior that he can react to authority by means other than humiliating submission. We would use clarification by explaining to him the relationship between some of his symptoms and his conflicts in regard to authority figures, and perhaps by clarifying the way some of these patterns have developed. If this man were in a psychoanalytic situation, we would eventually interpret to him that his attitude toward his employer has derived from feelings of rivalry with past authority figures.

These various techniques describe things you can do in your role as "captive psychotherapist." But some cases are perhaps best handled by the so-called traditional medical approach rather than by a type of deliberate psychotherapy, although of course certain psychological benefits may accrue in the course of treatment. Here too one must not ignore the various positive psychotherapeutic consequences of the physician-patient relationship and what I have labeled as the "silent transference cures."

TRADITIONAL MEDICAL APPROACHES

Two broad and general categories of patients are perhaps best handled by the traditional medical approaches. First are those patients who are not sufficiently psychologically minded to benefit from psychotherapy; and second, those who are too sick, psychologically speaking, to receive psychotherapy unless administered with great caution and precision.

Let me elaborate on "not sufficiently psychologically minded" patients. This kind of patient presents himself with one or several psychosomatic symptoms. He may complain of vague anxiety or depression, which he calls "nerves" or "feeling low." Physical and laboratory examination probably will turn up nothing of consequence. The physician who attempts to get a better perspective of the patient's emotional life and problems runs up against a stone wall. The patient resolutely insists he has no emotional problems, however incontrovertible the evidence. This kind of person is really not aware of his emotional conflicts. He is not on good terms with his own feelings or inner life. He will resist and may also resent being confronted with manifestations of his feelings and emotional conflicts. He thinks and feels and deals with specific, tangible, and concrete entities. For him, his anxiety, his depression, his nervousness, definitely mean something connected with the "nerves." He is not comfortable with the abstractions and conceptualizations that belong to even the most elementary kind of formal psychotherapy. He wants his treatment in a concrete and specific form—something he can feel, taste or see—and not just in talk, ideas or abstract explanations. Therefore, most of these patients do better in the long run when they are treated by their own physicians in a symptomatic manner, with the traditional medical approaches, and when the psychotherapeutic benefits can be understood in terms of the "silent transference" influences.

Let me illustrate with a consultative case. The patient was an intelligent, attractive young woman, seemingly well adjusted. Yet superficial history of her case showed that she was quite disturbed emotionally and lived a narrow, restricted life. She had gone to her physician because of headaches for which there was no ostensible organic basis. She insisted that she had no psychological problems, but was happy and satisfied with everything. Her mother and father were ideal; her siblings were "loves"; her friends were "true blue." Any attempt to correlate her headaches with some stress or psychological situation met with no more than a reluctant concession that "perhaps they come when I'm tired."

I sent up a few trial balloons—suggesting that perhaps she was more involved in certain emotional reactions than she was aware. Those balloons were quickly punctured. She really did not have the slightest idea what I was talking about. I felt that this woman should not be treated psychotherapeutically; that her physician should continue with the usual antiheadache regimen and not try to explore the emotional basis for her difficulties. She was too well defended for such attempts, and did not have the psychological frame of mind or psychological readiness to accept such concepts. Repeated and overly strenuous probing would not only fail but might also jeopardize a good rapport which she enjoyed with her physician and which is essential to the symptomatic treatment of such cases.

In the second group—patients too sick, psychologically, for psychotherapy unless it is carefully administered by a highly trained therapist—are patients with a wide variety of so-called psychosomatic conditions such as certain skin diseases, asthma, ulcerative colitis and backache. Or they may complain of a diffuse hypochondriasis or a vague dissatisfaction with life. It is evident that their emotional life is disordered; their relationships with other people unsatisfactory; their overall approaches to living immature and chaotic. Some are fundamentally psychotic or borderline individuals who incorporate the somatic complaints into their psychological systems in such a way as to help them ward off an actual psychosis—or to maintain an otherwise shaky psychological equilibrium. Of course not all, or even most, of the patients with such complaints are psychotic or potentially psychotic; but many of them are potentially so disturbed that the possibility of psychosis should be taken into consideration when the case is evaluated.

The important point here is that a careless or overly zealous attack on these patients' emotional problems not infrequently ends with the patient becoming free of physical symptoms—but also quite psychotic. Patients of this order, too, are best treated by symptomatic measures, not too vigorously applied, and with the idea that the patients will grow old along with you. The psychological equilibrium they have achieved should not be shaken severely. Hence a relatively restrained approach on the part of the physician may be necessary.

Several years ago I was asked to see a middle-aged woman in the midst of a severe depression. The patient had always been a rigid, conscientious, typically compulsive individual. During her menopause, severe pruritus vulvae developed. Her family physician had intuitively dealt with the case in a benign manner, treating the pruritus in a gentle, symptomatic fashion; and the patient was not at all unhappy with the situation. But her more psychologically sophisticated daughters, recognizing something "emotional" in the case, insisted that the mother should consult a gynecologist who, they had heard, had a reputation of being psychologically oriented. The gynecologist very quickly pointed out that the itching had no organic basis and that the symptoms were obviously caused by emotional conflict. The next day the itching disappeared. But the patient could not sleep. She became more and more agitated and increasingly depressed. Soon she was in a fully developed involutional depression with a very distinct paranoid flavor. She had to be kept in hospital for a long time. In this admittedly somewhat extreme case, the patient would have done much better to continue in treatment with her understanding physician, who seemed quite willing and able to tolerate her symptoms—and to tolerate his own frustrations in not being able to effect a quick and dramatic cure.

Psychotherapy is not a kind of magic known only to a few privileged practitioners; it is a group of techniques based on much theoretical knowledge and empirical observation. Psychotherapy is not a rigidly prescribed procedure which works in a precise step-by-step manner, regardless of who is doing what to whom. It is an extremely flexible, fluid series of technical procedures which must be varied, not only for different patients within a certain disease or symptom group, but also for different psychotherapists. Just as each patient will take from the therapeutic "bill of fare" what he most wants and needs, so will each psychotherapist take from the psychotherapeutic armamentarium that which best fits his own needs and temperament.

And so the crux of psychotherapy is in the physician-patient relationship; and this operates essentially through the medium of speech—through talk. The one important thing is to be a good listener. However banal the dictum, a good listener is not easy to define. Certainly he must not be impatient, must not be uninterested. Certainly he must be honest—without censure, ridicule or condescension. The phrase I like best is borrowed from Dr. Emmy Sylvester, who once defined the essence of good psychotherapy as "respectful listening." Day after day and patient after patient after patient, nothing will be of greater benefit to your patients than your respectful listening.

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Phenothiazine Ataraxics

Extrapyramidal Reactions

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• Thirty-nine cases of extrapyramidal reactions caused by seven chemically different phenothiazine medications are presented. Historical, pharmacological, diagnostic, and therapeutic factors are considered. It is important that the physician prescribing phenothiazines be well aware of the reactions which may occur so that therapy may be discontinued at the first untoward signs.

THE WORD *ataraxia* is of Greek derivation, meaning perfect peace or calmness of mind. While the ataraxic group of drugs has served excellent purposes, it is well known that these drugs do not always provide perfect peace for the patient or the physician treating him.

This paper summarizes 39 cases of extrapyramidal reaction to phenothiazine brought to the Los Angeles County Communicable Disease Unit during the years 1958 to 1960. An analysis of the data and discussion of diagnosis, treatment and theoretical considerations is presented.

Phenothiazines had a colorful beginning, one of them being a basic compound in such dyes as methylene blue. Also, they were used in treating livestock for parasitic worms, and less than 15 years ago it was thought their clinical application for man would be in the treatment of worm infestation and urinary tract infections.[1] The phenothiazine compounds were developed at the Rhone Paulenc Laboratories near Paris, France, where experiments in using derivatives of this compound in trypanosomiasis and malaria were made.[12] In 1952, Haborit and co-workers synthesized promethazine (Phenergan,® Wyeth). Chlorpromazine also was developed in 1952, by Harmon, Paraire, Delay, Denilser, Harl and others, and initially was used in anesthesia. In 1954, Thiebaux[19] and co-workers of France, reported some of the first cases of extrapyramidal reaction secondary to phenothiazine administration, and within two years, reports of reactions appeared in the North American literature.[10,17]

Cohen[5] in 1956, in a review of 1,400 patients on chlorpromazine, noted that 4 per cent had Parkinsonism, with rigidity the prominent feature, only two patients having transient episodes of tonic spasm of various muscle groups, muscular twitching and torsion of the trunk. In a series[3] of 3,014 hospitalized patients receiving chlorpromazine, there was a 0.2 per cent incidence of Parkinsonism and 0.6 per cent of the patients had convulsions. As was noted by Flegenheimer,[6] the newer phenothiazines (Table 1, B) are more potent than chlorpromazine and produce fewer side effects, such as drowsiness, hypotension, jaundice and dermatitis. The incidence of extrapyramidal signs, however, is much greater with the newer drugs than with chlorpromazine. Incidence of extrapyramidal reactions was 38 per cent in a series of 363 chronic psychotic females treated with perphenazine,[21] and Freyhan[8] reported a 12 per cent incidence of dyskinesia with prochlorperazine and a 20 per cent incidence with trifluoperazine and perphenazine.

Signs of extrapyramidal reaction were of three kinds:

1. Dystonia or dyskinesia, characterized by spastic contractures and involuntary movements that may involve any muscle or muscle group and make for bizarre behavior of the patient. (The majority of our patients were in this group.)

2. Parkinsonism with tremor, rigidity and increased salivation.

3. Akathisia or turbulence, a condition of generalized restlessness, with inability to sit still.

Dyskinesia usually appears after two to three days of therapy with one of the newer phenothiazine drugs, whereas Parkinsonism usually is manifest after two to four weeks of chlorpromazine administration.[8] Perhaps this difference is due to different locations of biochemical action within the extrapyramidal system. Nielsen[14] mentioned that pathological change in the substantia nigra is most likely to cause tonic rigidity, whereas affliction of the globus pallidus results in kinetic activity.

The bizarre nature of these extrapyramidal reactions is reflected in the variety of tentative diagnoses that led to referral to the Communicable Disease Unit: Possible tetanus (58 per cent of all cases); encephalitis (16 per cent); meningitis (8 per cent); rabies (3 per cent); botulism (3 per cent); deferred (8 per cent). Before the nature of

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TABLE 1.—*Data on Causative Agents in 39 Cases of Extrapyramidal Reactions to Phenothiazines*

Chemical Name	Commercial Name	Manufacturer	No. Cases	Per Cent of Series
A. DIMETHYL DERIVATIVES OF PHENOTHIAZINE:				
Chlorpromazine	Thorazine	Smith, Kline and French	1	3
Promazine	Sparine	Wyeth	1	3
Trifluopromazine	Vesperin	Squibb	1	3
B. PIPERAZINE DERIVATIVES OF PHENOTHIAZINE:				
Prochlorperazine	Compazine	Smith, Kline and French	23	59
Trifluoperazine	Stelazine	Smith, Kline and French	1	3
Perphenazine	Trilafon	Schering	11	28
Theopropogate	Dartal	Searle	1	3

these reactions was fully appreciated, therapy for tetanus was even begun in one case.

The following cases briefly illustrate particular points:

CASE 1. A 17-year-old white boy received prochlorperazine for three days for nausea and vomiting secondary to influenza—10 mg. twice a day for the first two days and one dose of 15 mg. on the third day. Four hours after the last dose, uncontrolled intermittent movements of the legs began, with moderate pain in the back from muscular spasm, a sardonic grin, protrusion and curling of the tongue, and thick speech. Episodes occurred every 10 to 15 minutes and lasted several minutes. No other abnormalities were noted on physical examination. With discontinuation of prochlorperazine and administration of 60 mg. of phenobarbital, symptoms subsided within four hours.

Comment: This case was typical of the series, although in many cases the episodes were closer together and sometimes shorter. During intervals between reactions, the patient felt normal, but this was not a constant finding in all cases. It is noteworthy that the dosage given was within recommended limits.

CASE 2. A 14-year-old white girl was given perphenazine for nervousness following removal of an ovarian cyst one month previously. After taking 12 mg. of perphenazine in three doses over a two-day period, the patient was found standing in a daze in her bathroom and making odd movements. She was taken to a hospital and given sedative to induce sleep, after which the symptoms subsided. The next day the patient took 4 mg. of perphenazine in the morning and again in the afternoon. In the evening a more severe repetition of the bizarre movements occurred and she was admitted to Los Angeles County General Hospital. The blood pressure was 140/62 mm. of mercury, the pulse rate 100 and respirations 32 a minute.

The patient, who was well developed and slightly obese, was having intermittent episodes of clonic, tonic and athetoid movements while remaining fully conscious and unfrightened. Between attacks, the patient was quite normal. The nature of the movements varied and at times there would also be trismus, rotation of the head and neck, carpopedal spasm, nuchal rigidity and opisthotonus. Most remarkable was severe grinding of the teeth, which was clearly audible and resulted in fracture of four lower incisors. The episodes stopped promptly when 120 mg. of amobarbital was given intravenously and 90 mg. of phenobarbital intramuscularly. Additional doses of amobarbital and phenobarbital were necessary as there was return of spasms after several hours. The patient's symptoms subsided approximately six hours after the start of the second attack.

Comment: This case illustrated the dynamic involuntary muscular movements which may occur—in this instance sufficient to fracture four teeth. There has been a previous report of tooth fracture.[15] Additional comment will be made on therapy later, but, as has been noted by others, although the barbiturates are adequate for mild cases, more efficacious therapy is required in the severe cases.

Table 1 lists the drugs that were used in the cases in the present series and the number of patients affected by each. Seven of the patients with prochlorperazine reaction and seven with fluopromazine reaction had received dosage 25 to 50 per cent over the manufacturer's recommended dose. Particularly notable were three cases of more severe overdosage:

1. A 13-year-old Caucasian girl received two 25 mg. suppositories of prochlorperazine in one evening for nausea and vomiting. Extrapyramidal symptoms were reported to have lasted three days after diagnosis and transfer to another hospital. This was the longest duration of symptoms in the series.

2. A 33-year-old Caucasian woman who had nausea and vomiting of pregnancy took 5 mg. of trifluoperazine every three to four hours for a total dosage of 50 mg. in less than two days. The patient had neck spasms, pronounced hyperextension, dysarthria and dysphagia, movements of the tongue and decided extension of the feet for periods as long as 5 minutes. The deep tendon reflexes were diffusely hyperactive, but there was no pathologic reflex. The patient responded satisfactorily to treatment with barbiturates.

3. The patient, a 60-year-old white man, had been in good health except for depression with occasional threats of suicide for the preceding ten to fifteen years. There was no history of Parkinsonism or hypertension.

On February 28, 1960, about 11 p.m., the patient reportedly took between twenty and fifty 25 mg. tablets of Sparine® (promazine hydrochloride). Five hours later he was found semicomatose and was sent to a hospital.* On entry the blood pressure was 170/110 mm. of mercury, the pulse rate 114, respirations 16 a minute and the temperature 37.6°C. The patient had inappropriate response to questioning, and there was a decided "pill-rolling" tremor. Approximately nine hours after ingestion of the drug, cogwheel rigidity, profuse perspiration, dysarthria, hyperkinetic motor patterns, incoordination and active hallucinations were present.

At 10:30 the next morning, the patient was given 25 mg. of Benadryl® (diphenhydramine hydrochloride) intravenously. Within an hour there was appreciable clearing of the convulsion and a reduction of blood pressure to 140/80 mm. of mercury. Later doses of Benadryl were given by mouth and all reactions disappeared within 15 hours after onset.

Comment: No other patient had this degree of lethargy or suppression of mentality. The degree of transitory hypertension in this case was remarkable, since hypotension generally is associated with phenothiazine drugs due to their adrenolytic action. Only one other patient had a transitory elevated systolic blood pressure.

A large proportion of the patients in the present series—27 of 39—received phenothiazine for nausea and vomiting, including five who were in the first trimester of pregnancy. Only five were under management for mild psychiatric disorders. In most of the other large reported series the patients were under psychiatric therapy. We believe, in agreement with the conjecture by Cleveland and Smith,[4] that acute infection, particularly with nausea, vomiting and dehydration, may predispose to extrapyramidal reactions. There was no significant history of allergic sensitivity in any of the cases in the series.

Two of the patients later received the same phenothiazine again, without ill effect. Two others had a repetition of the phenothiazine reactions when they again were given the same preparation, but in those cases the resumption of the drug was during the same illness.

SIGNS AND SYMPTOMS

The most common signs and symptoms in order of decreasing frequency were: Spasm of the neck and opisthotonus; trismus; sardonic grin and facial spasm; protrusion or uncontrolled movement of the tongue; dysarthria; spasm of the extremities and shoulders, occasionally with carpopedal spasm; uncontrolled movements of the jaw; dysphagia. Drooling, rigidity and tremor of the hands and legs occurred in six cases. Difficult breathing, hyperpnea, oculomotor spasms, grinding of the teeth, athetoid movements, bleeding from bitten tongue and mucous membranes and hyperactive deep tendon reflexes were noted in some 5 to 10 per cent of cases. Five patients were noted specifically to be unconcerned, or tranquil, throughout their entire involvement, but an equal number complained of pain from muscular spasm. Only one patient, in our opinion, had sufficient persistent restlessness and turbulence to warrant the term *akathisia.* Single instances of nystagmus, nosebleed, tachycardia lasting two days, and hypertension were noted. None of the patients had a hairy tongue, a symptom that is occasionally reported.[16]

An analysis of time intervals was made in those cases in which the intervals could be well documented. The longest duration of reactions was three days and the shortest was four hours after discontinuance of phenothiazine. Reactions lasted less than 12 hours in 23 cases, and longer than 24 hours in only seven cases. The longest duration of phenothiazine administration before onset of reactions was six days, and the shortest was four to eight hours (Table 2). The usual interval between onset of the first extrapyramidal reactions and the last phenothiazine administration was less than eight hours. A number of patients received additional doses after the onset of early symptoms. In four patients symptoms did not develop until more than 12 hours after the last dose of phenothiazine. The longest interval in this category was 30 hours.

Twenty-two of the patients were females and 17 were males. It has been generally reported that phenothiazine extrapyramidal reactions are more frequent in females. A ratio of 2:1 was reported in one series.[8]

The age range in the present series (Table 3) was wider than in most others reported. The youngest patient was 11 months old. The youngest that could be found in the literature was six months old.[4] The oldest patient in the present series was a 60-year-old man.

DIAGNOSIS

The diagnosis of phenothiazine reaction is usually made with comparative ease from the rapid onset of the bizarre clinical manifestations and the history of administration of a drug from this group. Occasionally, where the history is uncertain, phenothiazine administration may be corroborated by a urinary test.[7, 20] When 3 ml. of urine are added to 1 ml. of solution containing 10 per cent ferric chloride and 1 per cent hydrochloric acid, a purple-brown color will develop instantly if sufficient quantity of a phenothiazine metabolite is present.

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*The patient was seen later in the Acute Unit of the Los Angeles County General Hospital after transfer there.

TABLE 2.—*Duration of Phenothiazine Therapy Before Onset of Extrapyramidal Reactions, and Time Between First Reaction and Discontinuance of Drug*

Duration of Phenothiazine Administration Before Onset of First Extrapyramidal Reactions		Interval Between Onset of First Extrapyramidal Reaction and Last Phenothiazine Administration	
Hours	No. of Cases	Hours	No. of Cases
4- 8	1	4 or less	10
8-12	....	4- 8	11
12-24	10	8-12	3
14-36	4	12-24	3
36-48	10	24-36	1
48-72	4		
Over 72	2		

TABLE 3.—*Age of 39 Patients with Extrapyramidal Reaction to Phenothiazines*

Age (Years)	Number
0 to 5	1
5 to 10	5
10 to 15	10
15 to 20	7
20 to 25	7
25 to 30	1
Over 30	8

We were not helped by other laboratory studies, including routine examination of blood, urinalysis, spinal fluid examination (done in the first 12 cases) and determinations of chemical contents of the blood: serum calcium, phosphate, urea nitrogen, carbon dioxide, potassium and sugar. Smith[18] reported mild increases in the protein content of spinal fluid in patients receiving phenothiazines. In four cases in which electroencephalograms were taken, the tracings were within normal limits even though taken immediately after seizures. This is to be anticipated, as the ordinary electroencephalogram does not record subcortical activity.

Reserpine may produce similar extrapyramidal reactions, and occasionally Deaner® (deanol) will cause tenseness of the jaw and neck muscles. With this bizarre activity, the diagnosis of conversion hysteria may tempt the unwary, and this is particularly fraught with danger if increased doses of phenothiazines are therefore contemplated. Reference[9] has been made, however, to probable cases of chronic, and particularly acute transient Parkinsonian reactions in combat neurosis that appear to have a psychogenic basis.

THERAPY

The initial step in therapy of a phenothiazine reaction is discontinuance of the causative drug and assurance to the patient that the reactions will be of short duration. Barbiturates, particularly the short-acting compounds, may be sufficient in mild cases. Caffeine sodium benzoate given intravenously, or Benadryl® (diphenhydramine) intravenously, or intramuscularly are more effective in giving prompt and lasting relief in the more severe reactions.

The anti-Parkinsonism drugs—Artane® (trihexyphenidyl), Cogentin® (benzotropine methane sulfonate), Kemadrin® (procyclidine hydrochloride) and Pagitane® (cycrimine hydrochloride) — have been used with success by some physicians. In psychiatric cases, the physicians in some institutions give a daily prophylactic dose of one of these anti-Parkinsonism drugs, or, if an extrapyramidal reaction has occurred, the dosage of the phenothiazine will be decreased and an anti-Parkinsonism drug given concomitantly.

COMMENT

The physiologic effects of the phenothiazines in usual therapeutic doses are generally due to an inhibition of subcortical centers, especially the hypothalamus, the brain stem reticular formation and the thalamic diffuse projection system. The extrapyramidal system, which is phylogenetically and ontogenetically earlier than the pyramidal system, influences the more stereotype activities. Krieg[13] well described the complex situation, stating that the mechanisms underlying the various clinical conditions associated with pathosis of the extrapyramidal system cannot be fully understood from an examination of the brain postmortem, for lesions are too varied and uncorrelated with the minimal pathosis. The one trait these abnormal motor patterns have in common is the exaltation of the strength of the stretch reflex.

Some psychiatrists have expressed belief that extrapyramidal reactions may be helpful in some cases, as they have noted remission of psychosis after episodes of this kind. Observations by other investigators[2,11] gave no support to that belief. No beneficial affect of extrapyramidal reactions is apparent in patients under therapy for gastrointestinal disturbances.

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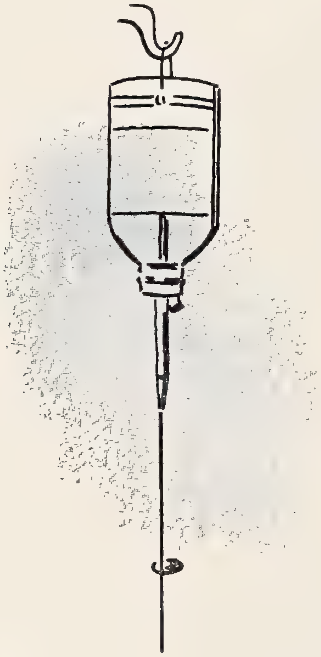

A New Antihypertensive Agent

Clinical Evaluation of a Rauwolfia-Flumethiazide Combination (Rautrax®)

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• **Twenty-eight patients were treated with Rautrax,® a combination of flumethiazide, rauwolfia and potassium chloride for from one to seven months. The average mean blood pressure for the group declined from 135 mm. of mercury to 107 mm. All but two of the patients had a decrease in blood pressure and 19 became normotensive. Associated symptoms of headache, dyspnea, edema and angina were completely relieved or improved in the majority of patients with these complaints. On the basis of the blood pressure response and the clinical effects seen in the patient, therapeutic results were classified as good to excellent in 22 of the 28 patients, fair in two, and poor in three. No evaluation was made in the remaining patient in the series because further adjustment in dosage was required.**

Three patients had side effects—moderate gastrointestinal upset in one case, headache and a sensation of the bladder's having been "wrung out" in another, and headache and paresthesia of the legs in the third. Only the third patient had persisting symptoms after the drug was discontinued. In the other two reduction of dosage sufficed.

THE USEFULNESS of chlorothiazide and similar compounds as adjuncts to other antihypertensive therapy has gained increasing recognition within recent years.[1,2,4,6,7] Since the effectiveness of antihypertensive agents generally is enhanced by using diuretic-saluretic preparations with them, the hazard of side effects can be lessened by reducing the dose without sacrifice of therapeutic effect. However, electrolyte disturbance may accompany active diuresis and some difficulty from potassium loss from use of these adjunctive drugs has been reported.[5]

Recently a new preparation, Rautrax,® which is designed especially to provide antihypertensive therapy without the problem of potassium loss, has become available for clinical use. It combines the well-recognized antihypertensive agent rauwolfia serpentina (whole root) with a new oral diuretic agent, flumethiazide, with added potassium chloride. I used Rautrax® over a period of seven months in the treatment of unselected hypertensive patients and found it remarkably effective, especially in patients with essential hypertension.

Eight men and 20 women were treated. The range of ages was from 44 to 80 years, 18 patients being 60 years old or older. Hypertension was noted on routine physical examination in all cases. "Essential" hypertension was the diagnosis in 22 cases, hypertension associated with arteriosclerosis in four others. In the remaining two the disease was classified as combined essential and arteriosclerotic hypertension. The range of blood pressure was from 150 to 245 mm. of mercury systolic, and from 95 to 135 mm. diastolic, with an average for the series of approximately 192/106 mm.

Associated conditions noted on examination of the patients or derived from the history included the following:

Condition	Present	Past	No. of Patients
Arteriosclerosis	x		8
Cerebrovascular accident		x	2
Heart disease	x		5
Cardiac infarction		x	2
Angina pectoris	x		3
Cerebral dysrythmia	x		1
Arthritis	x		1
Osteoporosis	x		2
Obesity	x		6
Menopause	x		4
Allergy	x		3
Carcinoma of bladder	x		1
Cholelithiasis	x		1
Parkinson's disease	x		1
Hypothyroidism	x		1

In a number of cases, more than one of the conditions given in the table were present in the same patient.

Two additional patients were originally included in the series but were dropped from the study before evaluation of results could be made. One of these patients died suddenly after approximately a month of treatment. She had appeared to be well the day before she died. Even so, her death was not unexpected, for she had a history of long-standing hypertension with associated angina and on one occasion had had some cardiac decompensation. The other patient was dropped from the study because gastrointestinal upsets developed after almost a month of therapy with Rautrax® and the drug had to be discontinued. She had had similar reactions previously with other rauwolfia preparations.

Submitted December 11, 1959.

TABLE 1.—***Blood Pressure Response to Rautrax® in 28 Hypertensive Patients***

	No. of Patients Treated	Average Mean Blood Pressure (mm. Hg.)*		No. Becoming† Normotensive	No. with Drop in Mean Blood Pressure of at Least 20 mm. of Mercury
		Initial	Posttherapy		
Men	8	138	103	6	8
Women	20	133	111	13	10
Entire series	28	135	107	19	18

*Mean blood pressure: Diastolic plus one third of pulse pressure.
†Normotensive: Mean blood pressure of 110 mm. of mercury or less.

TABLE 2.—***Evaluation of Clinical Response to Rautrax® in 28 Hypertensive Patients***

Clinical Response	No. of Patients		
	Male	Female	Total
Excellent	5	11	16
Good	2	4	6
Fair	1	1	2
Poor	0	3	3
No elevation	0	1*	1
Totals	8	20	28

*Pronounced decrease in blood pressure obtained with 1 tablet of medication three times a day was followed by rise when dosage was reduced to 1 tablet daily. Dosage was not yet adjusted at time of report.

Rautrax® contains in each tablet 50 mg. of whole root rauwolfia serpentina, 400 mg. of flumethiazide and 400 mg. of potassium chloride. The action of whole root rauwolfia in lowering the blood pressure and relieving associated "hypertensive" symptoms is well recognized. Flumethiazide is a new oral nonmercurial drug with diuretic activity roughly equivalent to that of chlorothiazide, to which tolerance does not develop.[3] Although a saluretic agent, flumethiazide does not significantly alter the concentrations of serum electrolytes.[3] Moyer said that flumethiazide has less effect on potassium excretion than do chlorothiazide and hydrochlorothiazide.[5] Potassium chloride was added as an ingredient of Rautrax® to protect against any loss of potassium that might occur from the saluretic action of the drug.

At the beginning of treatment the dose of Rautrax® was one tablet three or four times a day. Usually the dosage was reduced later to one or two tablets daily, depending upon the clinical response of the patient, but seven patients continued to receive the initial amount throughout the period of treatment. At the time of this report, the patients had been treated for from one to seven months, half of them for at least five months.

RESULTS

The therapeutic results obtained in this series are categorized in Tables 1 and 2. Clinical results were very satisfactory in the majority of patients. The average mean blood pressure* for the group as a whole decreased from the initial level of 135 mm. of mercury to 107 mm. Blood pressure levels declined in all but two of the 28 patients, significantly so in 18,† and reached normal levels‡ in 19 patients (Table 2). Although proportionally more men than women became normotensive, the difference probably was related to the presence or absence of sclerosis rather than the sex of the patient.

Associated symptoms of headache, dyspnea, edema and angina were completely relieved or improved in the majority of patients who had them. One patient with arteriosclerotic heart disease associated with hypertension was able to discontinue the use of digitalis and of additional diuretics while receiving Rautrax.® She had not been able to do so with previous antihypertensive therapy. A patient who had cerebral dysrhythmia in addition to the hypertension had no major attacks of unconsciousness and less frequent episodes of myoclonia and visual disturbances after treatment with Rautrax.®

On the basis of the observed decrease in blood pressure to normal or near normal levels and the clinical improvement in most or all of the associated symptoms, therapeutic results were considered to be excellent in 16 patients, good in six and fair in two.

In three other patients, there was little or no improvement either in blood pressure or in the relief of symptoms, and the results of treatment were rated as poor. No evaluation was made in the remaining patient in the series because the dosage had not been effectively stabilized at the time of report. Although her blood pressure decreased from 170/110 to 125/85 mm. of mercury with the initial dosage (one tablet three times a day) it rose to 160/100 mm. when the dose was reduced to one tablet a day, and further adjustment in dosage of the drug was indicated.

Side effects were observed in only three patients. One had moderate gastrointestinal upset while taking four tablets daily, but not after the dosage was reduced to three tablets a day. In another case Rautrax® was discontinued when the patient complained of a peculiar headache and paresthesia of the legs. Reducing the dosage did not relieve these symptoms and they persisted for two months after the drug was discontinued. This patient had generalized arteriosclerosis with severe hypertension and had had a "stroke" three years before. One possible explanation is that these symptoms may have been a reaction of the central nervous system to the dehydration induced by the drug. A patient who had habitually complained of side effects from previous medication, said she had severe headache while taking three tablets of Rautrax® a day. On her own initiative she stopped taking it. Then when she resumed the drug at 1 tablet daily, under medical direction, she felt better; but when the dosage was increased again to three tablets a day she complained that her bladder felt "wrung out."

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* Mean blood pressure is defined here as diastolic pressure plus one-third of pulse pressure.

† Drop in mean blood pressure of at least 20 mm. Hg.

‡ Mean blood pressure of 110 mm. Hg. or less.

One of the men died during treatment but his death was not unexpected since he had coronary arteriosclerosis with angina and had had coronary occlusion some years before. In this patient a massive anterior cardiac infarction occurred some two months after the blood pressure had decreased under treatment with Rautrax® from 180/110 to 120/70 mm. of mercury. He died 11 days later, probably of ventricular fibrillation.

The general impression of Rautrax® from this trial was that it is a remarkably effective material and a valuable antihypertensive agent at least for the initial phase of treatment of patients with essential hypertension.

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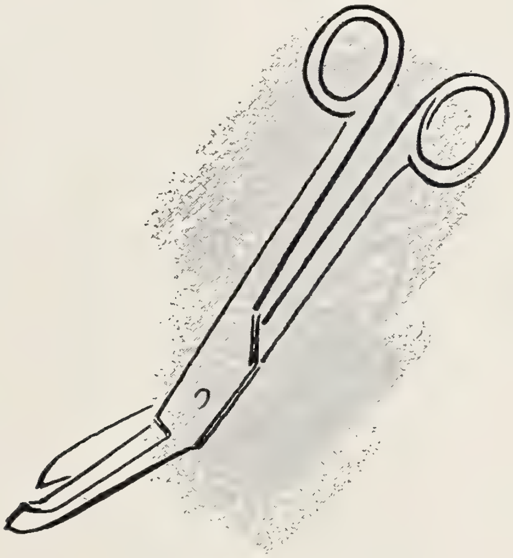

The Coroner and the Common Law

III. Death and Its Medical Imputations

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SOMETIMES A PERSON is alone when he dies. More often, friends or relatives are present. In rare and fortunate instances the family physician is present at the time of death. In any case the physician who has been in attendance upon the patient in his last illness immediately becomes responsible for the signing of the death certificate within 36 hours, provided (1) he is duly licensed and qualified; (2) he has been in attendance upon the patient for a legal length of time; (3) he has adequate knowledge of the patient's illness. In the certificate he must record the legal details of personal identity of the patient, the time relationships of the illness and the death, the immediate cause of death and any accessory, contributing or miscellaneous diseases. This record may be completed at the place of death or elsewhere upon receipt of the blank certificate. After this certification the family or other responsible persons may release the body to a legally qualified and licensed person who has been employed to conduct the burial.

If for any valid reason the physician is unable to sign the death certificate, he must remand the case to the coroner by reporting the salient circumstances of the death to him or his deputies. This report may be given orally, by telephone if the physician wishes. Under the latter conditions it is unlawful for anyone but the coroner's representative to remove a dead body from the position or place of death to any other position or location, unless the body is inflammatory to the public view, such as in an open and exposed place, or if it constitutes a public hazard by its location, such as on a congested thoroughfare. Nonmedical personnel, such as ambulance attendants, public health department stewards, or nurses when called to the premises of a sick, comatose, moribund or apparently dead person may take whatever steps necessary for ascertaining the advisability of summoning medical treatment. They may also administer emergency first aid. Such persons may go through the established medical routine of determining whether or not the patient is dead. When it becomes apparent that emergency first aid or further medical attention will be futile or that the patient has died, neither the body of the deceased nor any of the adjacent surroundings may be further disturbed by anyone but persons with the coroner's legal authority.

No attendant or other person excepting the coroner's representative is entitled to search the body, clothing or premises of a dead person, nor may any person direct a member of the family to conduct such a search. It is illegal for anyone, including newspaper reporters, to seek pertinent information of the relatives before the death certificate is signed by the physician or authority has been assumed by the coroner. An exception obtains in the case of an ambulance crew that might remove a dead person or one who died in transit from the place of collapse or death to an emergency hospital. In these circumstances, the property and effects of the dead person are received by the admissions clerk of the institution and accounted for by the hospital authorities in the same manner as if the patient were alive.

If, after death, there are no members of the family present and the body is attended by either casual friends or incidental strangers, those in attendance should notify the family, the family physician or the coroner. They should then see that the premises are locked. All persons should be warned against entry. The police department may also be called so that an officer of the law may be present and on guard pending the arrival of members of the family, the family physician or a coroner's representative. In obvious criminal, accidental or suicidal deaths, both the coroner's office and the police department should be notified at once by anyone present. Upon notification, a member of the police must appear in person to conduct an official investigation. It is, however, improper and unlawful for a police officer to give or accept vocal orders for removal of the body of a deceased person but he may take such action upon receiving written orders from the coroner's office.

In coroner's cases, coroner's deputies may remove the body to any authorized place. Any citizen may be deputized by the coroner at his discretion and any place may be designated. It is unlawful, excepting in the most unusual circumstances, such as death occurring at sea or in remotely isolated and inaccessible areas, for any unlicensed person

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Part III of an article in five parts. Parts I and II appeared in the May and June issues; others will appear in succeeding issues.

to act as an agent of interment. If such an emergency burial is unavoidable, the circumstances should be reported to the nearest legal authorities at the first opportunity.

The death certificate, after completion, is filed with the Bureau of Vital Statistics, where it is reviewed and finally tabulated. If the certification is unsatisfactory or inadequate, the Bureau of Vital Statistics may suspend the death certificate and report the case to the coroner for review. Morticians may also refuse to accept a death certificate, if in the progress of their work they find that the cause of death as certified is inaccurate. Or, if suspicious circumstances are encountered, they should immediately report their findings to the coroner's office.

Responsibility for the reporting of irregularities of a suspicious nature is not limited to the physician, the mortician and employees of the health department. Every citizen having knowledge of previous, accessory or subsequent suspicious circumstances associated with death is required by law to report the facts truthfully to the proper authorities. The coroner's office in accepting information must rely implicitly upon the honesty of the reporting persons. Section 148 of the California State Penal Code provides penalty for anyone giving false information and provides that such reports shall not be made except in bona fide coroner's cases. This does not include cases wherein a physician may wish to obtain an autopsy after permission has been refused by the family. Conversely, the code provides that information regarding authentic coroner's cases shall not be withheld. It further provides that in coroner's cases autopsy studies shall not be made by a physician or pathologist after obtaining autopsy permission from the family unless the permission of the coroner has also been obtained. Violation of this section of the Penal Code is an offense punishable by imprisonment up to five years and a $5,000 fine.

Although not illegal, it is improper and unwise for physicians to conclude the "dead and discharge" note in their records or in a hospital chart with the clause "cause of death unknown" when the progress reports made to the family have given ample evidence of adequate knowledge of the sequence of events leading to death. It is also inadvisable to include in the discharge or terminal notes of medical records the entry that death may have been due to a "possible injury," or "possible drug ingestion" or "possible transfusion reaction" or any other medical uncertainty in the hope of creating sufficient doubt in the minds of relatives either to persuade one of the family to sign an autopsy permit or to cause the coroner to order an autopsy when there is not sound reason to perform one. The coroner's office must accept a request for a preliminary investigation, but a provocation should not be used by house staff officers, hospital authorities, physicians, or members of the family to induce the coroner to authorize an autopsy study. The pathologist, acting independently or as an agent of an institution, has a special responsibility both in accepting a permit for an autopsy and during the investigation. Should the pathologist, in the review of the history submitted with the autopsy permit, decide that the case belongs in the coroner's jurisdiction, he should not proceed with his investigation but report the case to the coroner for clearance. When in the progress of an autopsy, he finds that the death may have been due to dubious circumstances, the autopsy should be arrested and the coroner's office consulted for procedural directions.

Excepting for the coroner's cases, the public administrator of the county has official jurisdiction of the body where there is no estate, no will, an estate with no will, or where there are neither relatives nor responsible friends. After notification in such cases he takes charge of the body and the property of the decedent, searches for the next of kin, arranges for burial as may be required by law and administers the disposition of the residual funds and personal effects. The state anatomical board in certain circumstances may assume authority and retain bodies for dissection.

In cases in which death is apparently due to natural causes, a death certificate is signed, the body is buried and then subsequent evidence reveals that there may have been other causes of death than those recorded, the coroner has the authority of exhumation. Under Section 27491 of the Government Code, he may "for the purposes of such investigation, in his discretion take possession of and inspect the body of the decedent, which shall include the power to exhume such body" and order an autopsy examination. The cost of exhumation and the autopsy is borne by the county.

POLICE DEPARTMENTS

While police officers have a special responsibility associated with death, police officers are not authorized to pronounce a person dead. This responsibility lies with the stewards of emergency hospital services, private physicians or a coroner's representative. The presence of an acquaintance of the deceased or the locking of the house or room does not justify the police officer in leaving the place of death before the arrival of a responsible friend, relative or duly constituted official. The police officer has no authority or responsibility to establish personal identification, or to take charge of the property at the scene of death. He should not search the body, clothing or premises of the deceased. He may, with the consent of the coroner, take charge of the lethal weapon in a case of murder. He may not, however, take charge of suicide notes, wills or other documents, nor may he take or disturb any instruments or weapons with which a suicide was effected, these being solely in the stewardship of the coroner's office. Coroner's deputies themselves should not search a body or premises excepting in the presence of witnesses. Witnesses should be sought and asked to sign a list of the personal property of the deceased, whenever possible. At least one witness must be present, under any circumstances, before any public official may search a dead person or his premises.*

AUTHORITY TO SIGN AN AUTOPSY PERMIT

Until recently (1956) it was unlawful for a living person to grant permission for autopsy upon himself. Such bequests were unlawful because by existing statute a body after death, together with the rest of the estate, became the property of the heirs. A dead person had no property rights. Nor could an individual, under California law, will his body or any part of it to an institution for educational or experimental purposes. Then in January, 1956, recognizing the great benefits derived by society from the surgical transplanting of "dead" tissues to living patients, and for other enlightened reasons, the California State Legislature passed an act declaring it legal for an individual to permit an autopsy upon himself and to bequeath all or any part of his body to a qualified institution in order that it might acquire eyes, arteries, bone, cartilage, skin or other organic tissues for banking, research or educational or other academic purposes.

The legislation controlling autopsy permits has also been recently revised. Before the enactment of the new legislation, an autopsy permit had to be signed by the next of kin. The line of succession was spouse, father, mother, brothers and sisters in chronological sequence, then uncles, aunts and other relatives in the order of relationship. The law now permits any one responsible relative to authorize an autopsy. Where there are no relatives, a friend who will assume the expenses of burial may sign an autopsy permit. If the deceased is either intestate or indigent and has neither friends nor relatives, the public administrator of the county may permit an autopsy. In cases where there has been an accident which might be considered a contributory cause of death or where a claim has been made by the family upon an insurer or responsible persons for indemnification, an autopsy may be ordered by an official of the State Industrial Accident Commission. A duly elected or appointed judge may also issue a court order for a necropsy examination in such cases. The autopsy permit need not be a formal printed form. Any simple holographic statement on any kind of stationery is legal if it is signed by a qualified person in the presence of a witness who has also signed the document.

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*All legal interpretation cited is general principle. There are many variations in local county and state health and safety codes.

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Early Infectious Syphilis

Male Homosexual Relations as a Mode of Spread

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• Homosexual relations play an important part in the transmission of infectious syphilis. A preponderance of the males with infectious syphilis treated in Los Angeles City Health Department clinics in 1959 admitted to exclusively homosexual relations during the period in which they became infected.

In the interviewing of males with infectious syphilis, inquiry should routinely be made relative to possible homosexual relations, for investigation of the sexual partners of homosexual males is particularly productive in terms of new case finding.

The practicing physician's awareness of the epidemiological significance of homosexual activity will influence his degree of clinical suspicion, his attitude in the physician-patient relationship and his concept of the opportunity and responsibility of bringing to examination the infected patient's sexual partners.

THAT HOMOSEXUAL RELATIONS play a large part in the spread of infectious syphilis in the City of Los Angeles was demonstrated by the results of a recent study. The findings assume additional importance in view of recent increases in the prevalence of early infectious syphilis. The significance of male homosexual activity as an important factor in the transmission of venereal disease deserves recognition by both practicing physicians and public health agencies.

In an attempt to evaluate quantitatively the contribution of male homosexual activity to the total problem of infectious syphilis as experienced locally, an investigation of morbidity reports and medical records maintained by the Los Angeles City Health Department was instituted. In the calendar year 1959 a total of 292 persons residing within the city limits of Los Angeles were reported as having primary or secondary syphilis. Private physicians reported 96 (32.9 per cent) of these cases and the remaining 196 or 67.1 per cent were diagnosed in venereal disease clinics operated by the city. Each of the nine venereal disease clinics operated in the nine district health offices of the City Health Department reported some cases, although not in equal distribution. A standardized routine is established for the diagnosis, treatment and follow-up care of patients with venereal infections, and uniform records are maintained in these clinics.

The series of patients considered in this study —194 persons with primary or secondary syphilis —comprises all patients diagnosed as having primary or secondary syphilis during the calendar year 1959 in city-operated clinics. Records on two other patients were not available.

In a review of the literature and of our patient records, no report was found of the transmission of any venereal infection as the result of homosexual relations between females. Hence this study is retricted to the role of male homosexual relations in disease transmission.

Of the 194 patients diagnosed with infectious syphilis, 170 or 87.6 per cent were males.

All patients in whom the diagnosis of primary or secondary syphilis is established are routinely interviewed at the time of diagnosis by medical interviewers to elicit the names and addresses of persons with whom they have had sexual contact—persons from whom the infected patient could have acquired the disease or to whom, once having become infected, he could have transmitted the disease. Uniform interviewing techniques are used. Those sexual contacts who are located by medical investigators are referred to their private physicians or to city clinics for examination and treatment. The location of potentially infected contacts of patients with infectious syphilis is considered a high priority effort by the public health agency.

Only 11 of the patients interviewed were unable or unwilling to identify at least one person with whom they had had sexual contact. Of the 159 males who revealed the identity of sexual partners, 89 (56 per cent) named only male sexual contacts, 21 (13.2 per cent) indicated that they had had sexual relations with both males and females and 49 (30.8 per cent) named exclusively female sexual partners.

It is interesting to note that these seemingly startling figures are readily accepted by the physicians, nurses and medical investigators working in the venereal disease clinics. It has been their subjective impression that in recent years a decided increase was being seen in homosexual patients who had become infected with venereal disease. Con-

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From the Los Angeles City Health Department.
Submitted May 4, 1960.

TABLE 1.—*Number of Cases of Primary and Secondary Syphilis by Year in Five West Coast Metropolitan Areas (1955-1959)*

City	1955	1956	1957	1958	1959	Per Cent Change 1955-59
Los Angeles City	70	58	113	223	274	+291.4
San Francisco	45	89	124	144	311	+591.1
Portland	26	11	10	6	9	− 65.4
Seattle	15	18	13	14	36	+140.0
Los Angeles County excluding Los Angeles City	27	39	33	51	57	+111.1

Source: U. S. Public Health Service—Figures compiled for fiscal years of the political units listed, in contradistinction to figures elsewhere in this article, computed on calendar year basis.

siderable effort is made to expeditiously locate and bring to examination each individual named as a sexual contact. The diagnosis of syphilis in a person named as a contact serves to authenticate the reliability of the information which identified the contact as a sexual partner.

The interviewer seeks to identify the persons who participated in sexual intercourse with the infected patient during the period in which the patient could have acquired or transmitted the disease. This period is three months before the onset of symptoms in the case of primary syphilis and six months before the onset of symptoms in secondary syphilis.

The 89 males who participated exclusively in homosexual relations during the period covered by the interview named 551 different persons as sexual partners. The average number of different sexual partners per patient during the presumably communicable period—6.26 in the present study—is referred to as the contact index. This does not represent the total number of sexual episodes, but the number of different named persons with whom there was at least one sexual episode. The 49 males who had exclusively heterosexual relations identified 137 sexual partners—a contact index of 2.79. These figures would tend to confirm the impression of workers in the venereal disease clinics in Los Angeles, that, in general, exclusively homosexual males of the type seen in clinic are more promiscuous than the exclusively heterosexual males. The largest number of sexual partners reported by any one infectious male patient was 48, all of them males. Investigation of those exposed by this one patient brought to treatment five additional patients with active syphilis.

How many persons would have syphilis and not know it except for the contact investigations can only be conjectured. Among the persons who had had sexual contact with the 89 exclusively homosexual patients in the present series, 93 were found to have syphilis. This ratio, expressed as an epidemiological index, was 1.04. The epidemiological index for exclusively heterosexual males was 0.59.

Treating the patient alone does not represent the culmination of the physician's responsibility. Locating and examining persons who have had sexual contact with infected patients is essential for the eradication of syphilis. This is particularly urgent in view of recent increases in the incidence of infectious syphilis (see Table 1). It is our impression that the majority of the increase in Los Angeles between 1955 and 1959 was due to homosexual transmission of infectious syphilis.

Homosexual acts are prohibited by law and punishable as felonic in the State of California with a maximum possible sentence of 15 years' imprisonment for oral copulation and life imprisonment for sodomy (California Penal Code, 1959, Sections 288A and 286). In practice, however, homosexuals apprehended are often permitted to plead guilty to the minor charges of disturbing the peace (California Penal Code Section 415) or injuring the person or property of another (Section 650½) or vagrancy and lewd conduct (Section 647.5) with much less severe penalties. An additional requirement may be that the accused person register as a sex offender.

The legally contravened nature of homosexual copulation thus places additional importance on the confidentiality of the physician-patient relationship. Patients who have venereal disease as a result of homosexual relationships may very understandably be reluctant to disclose the manner of infection or the identity of others whom they may have infected. Any impression of collusion between law enforcement agencies and medical treatment agencies detracts from the effectiveness of case-finding among homosexual patients by rendering the patient and his sexual partners suspicious, uninformative and purposely misleading. Word of the trustworthiness of physicians and public health agencies appears, however, to spread rapidly in homosexual circles.

In view of patients' reluctance to spontaneously admit the mode of infection, it becomes imperative for physicians to possess a clinical index of suspicion directed toward the detection of the atypically located venereal lesion. The possible clinical significance of seemingly innocuous complaints such as rectal discomfort, discharge or minor fissure is apparent. Evaluation by anoscopy is to be considered in male patients suspected of venereal disease or homosexual activity.

The usual homosexual patient seen in Los Angeles City venereal disease clinics is a young white male of average or above-average socio-economic status. In acts involving sodomy or fellatio he may be either the aggressor or the recipient.

The patient presenting himself for treatment of a venereal infection acquired through homosexual relations may represent any one of a multiplicity of behavior patterns derived from the broad continuum of homo-heterosexual preferences. He may possess no feminine mannerisms and not be identifiable by physical appearance or demeanor. Conversely his feminine traits and characteristics may be conspicuous and immediately apparent. His behavior may be extremely promiscuous, as typified by the aggressor male who may have both male and female contacts and who possesses the dubious distinction of achieving the highest number of sexual contacts of any homosexual patient. On the other hand, two males may establish a stable relationship and live *en menage* for varying periods of time. Proceeding down the scale from passive amateur to female impersonator, male prostitute, and husband and wife relationship, there is seen a significant decrease in the number of contacts. It follows that less venereal disease is found among the more discriminating individuals. There may be no attempt to conceal homosexual inclinations and preferences, or a patient may be married and utilize his marital status to supply the guise of conformity.

It is thus apparent that attempts to identify a male as homosexual based upon physical appearance or mannerisms or marital status are futile. There is a broad spectrum of behavioral activity ranging from the exclusively heterosexual to the exclusively homosexual, and all shades of gradation are represented between the two extremes.

Due to the multiplicity of modes of sexual contact, primary syphilitic lesions contracted through homosexual activity may be present on the penis, scrotum, inguinal area, para-anal tissues, rectum or mouth. A rectal chancre will readily infect a sexual partner's external genitalia and this is the mechanism of homosexual transmission most frequently encountered.

As in any interpersonal relations, the physician's attitude toward the homosexual patient is of importance in the therapeutic process. The desirable sympathetic approach toward patients may be complicated by the physician's own attitudes, emotions and judgments relating to homosexual activity. An awareness of his own attitudes and feelings will facilitate a nonjudgmental physician-patient relationship.

It is interesting to note that there appears to be a diminished suspicion toward the hazard of contracting venereal disease on the part of some homosexual patients, which results from the erroneous concept that venereal disease is more likely to be associated, or is exclusively associated, with heterosexual relations. The reeducation of patients who have this misconception is important and is inherent in the responsibility of the physician.

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CASE REPORTS

Short Umbilical Cord Complicating Elective Pitocin® Induction

CHARLES F. MONTAGUE, M.D., Ventura

IT IS WELL KNOWN that in some patients administration of Pitocin® (oxytocin injection USP) to induce labor at term does not have the desired effect simply because of idiosyncratic insensitivity of the uterus to normal doses of the drug. Indeed, because it is so well known, physicians using Pitocin® for this purpose must guard against complacently assuming in all cases of induction failure that the failure is ascribable to Pitocin® insensitivity. There are many other possible reasons that must be considered lest a dangerous complication be overlooked.

The following case report will illustrate one of the less common, but very important, mechanisms responsible for failure of Pitocin® to induce labor.

REPORT OF A CASE

A 26-year-old white woman, pregnant for the fourth time, had had three previous spontaneous vaginal deliveries at term. The infants all weighed between 6 pounds 7 ounces and 7 pounds 15 ounces. The duration of labor at the birth of the first child was 12 hours, and for the other two was four hours each.

The antepartum course in the present pregnancy was uneventful and results of physical examination and routine laboratory tests were within normal limits. The baby seemed of term size and was in vertex presentation. The condition of the cervix was favorable for induction of labor. Two days after the expected date of parturition the patient was admitted to hospital for an elective induction of labor by means of intravenously administered Pitocin.® On examination at the time of entry into the hospital it was noted that the infant was about seven pounds in size and was in occiput left transverse position. The cervix was soft and 20 per cent effaced with the opening dilated to 2 cm. The station of the fetal head was minus one.

At 6:30 p.m., a 1:1000 Pitocin® drip was started intravenously at five to six drops per minute. The fetal heart rate was initially 140 per minute and regular. The membranes were stripped but not ruptured. The Pitocin® drip was steadily increased after it was determined that the uterus was not unduly sensitive to the Pitocin.® After an hour, during which the rate of flow was gradually increased, contractions had increased in quality to the point that the patient required analgesia. The contractions were then recurring every 3 minutes, lasting from 30 to 40 seconds. Dilatation of the cervix progressed to 4 cm. and the fetal head had descended to station zero with each contraction. Labor continued at this rate for the next two and a half hours, during which time the Pitocin® drip was gradually increased to 90 drops a minute. There was no further descent of the fetal head nor dilatation of the cervix, however. The fetal heart rate, which had been observed about every 15 minutes during the three hours and found to be regular at 140 a minute, suddenly dropped to 60 a minute and became irregular. The Pitocin® drip was immediately discontinued, but the fetal heart tones remained at this low rate for the next three minutes. Contractions ceased and the fetal heart tones rose to 180 per minute, becoming strong and regular. The fetal head, which was at no time considered tightly applied to the cervix, nor engaged, returned to station minus two and the uterine contractions over the next two hours became very weak and irregular, finally disappearing completely.

During the 24 hours following the foregoing episode, the fetal heart rate remained regular at 140 per minute, there was no uterine activity, and the patient remained comfortable. The following evening, Pitocin® in the same dilution was again started, and approximately two minutes later the patient had her first contraction. With this contraction, the fetal heart rate again dropped to 80 per minute and became irregular. The Pitocin® drip was immediately discontinued, the fetal heart rate returned to normal limits and the patient had no further contractions.

It was decided that either a tight loop of cord or a short umbilical cord was obstructing labor. Elective cesarean section under spinal anesthesia was decided upon as necessary for the baby. Through a low segment transverse incision, the fetal head was delivered easily, as were the shoulders. However, despite the fact that the cord was unentangled, it was impossible to deliver the fetus from the uterine wound without dividing the funis. This

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Submitted March 29, 1960.

was effected and a living male infant was then delivered with ease. The placenta, which was manually removed, was observed to have been attached to the fundus. The infant weighed 6 pounds 12 ounces and was normal in all respects. The placenta was 15 x 16 x 5 cm., had a paracentral insertion of the cord, and was also normal. However, the cord was only eight inches (22 cm.), 3 inches being attached to the fetus and 5 inches to the placenta.

DISCUSSION

Clinically, umbilical cords are either "absolutely" or "relatively" short. A cord must be long enough to reach from the placental site to the vulva, and if the placenta is located in the uterine fundus, a length of 32 cm. is necessary. If less than 32 cm. long, it is considered "absolutely" short. A "relatively" short cord is one that is entangled about the fetus in such a way that descent of the fetus is impaired.[2]

In a review of the literature of recent years, relatively little was found on the obstruction of labor due to a pathologically short umbilical cord. Rosen[3] analyzed 1,525 deliveries at the Brooklyn Women's Hospital and reported an incidence of 0.78 per cent of cord length less than 30 cm. He noted further that 16.8 per cent were relatively short—that is, entangled in such a way that free mobility of the fetus was greatly impaired. Zambonini[4] reported an incidence of 0.3 per cent of "absolute shortness" of the cord. Without question, absolute shortness, presents a far greater hazard than relative shortness, although the latter may certainly present problems. Rosen admitted the difficulties and listed the following signs as accompanying such a complication:

1. A delay in the second stage of labor.
2. Failure of a normally presenting part to decend into a normal pelvic cavity.
3. Recession of the presenting part at the end of each contraction.
4. A high station of the presenting part in the absence of other cause.
5. Signs of fetal distress, such as irregularities of the heart rate, passage of meconium or increased activity of the fetus.
6. Irregular short and painful contractions.
7. Hypertonicity of the fundus.

Bret[1] reported and described five cases of "absolute" short cord. The length of the funis in these cases reportedly varied between 27 cm. and 37 cm. In three of these cases delivery by cesarean section was required. In one of the two cases in which the baby was delivered vaginally, there was a partial laceration of the umbilical cord, and in the other the infant was stillborn. In addition to these cases, there have been only about a dozen papers written, all but one of them in foreign journals, reporting cases of a short cord rupturing spontaneously during labor.

The present case illustrates the well established fact that continuous careful observation is always necessary during elective induction of labor. Furthermore, when labor does not ensue as expected, one must always consider underlying obstruction or inhibition. If the patient had entered spontaneous violent labor and fetal heart tones could not have been observed, the outcome might not have been so favorable.

SUMMARY

Pitocin® was given to induce labor two days after the expected date. The condition of the cervix was favorable at the time. Labor began and intensified with increasing dosage of the drug, the fetal head descending to station zero with each contraction. Then there was no further descent in two and a half hours and the fetal heart rate slowed precipitously. Pitocin® was discontinued, contractions stopped, and the fetal heart rate increased. When Pitocin® was tried again a day later contractions resumed and the fetal heart rate dropped again. At cesarean section it was observed that the umbilical cord was short, a complication that might not have been discovered in time to save the baby's life if it had been assumed that failure of delivery was because the patient was insensitive to Pitocin,® as many patients are.

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Probable Pericardial Cyst—Report Of an Unusual Case

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A MEDIASTINAL CYST that produced physical manifestations consistent with epigastric tumor is the basis of this report. Diagnostic pneumoperitoneum preoperatively was most valuable in determining the existence of a unilocular spherical cyst, 3.5 cm. in diameter, probably of pericardial origin.

REPORT OF A CASE

A 36-year-old Caucasian woman, a hospital attendant, was seen in surgical consultation July 25, 1956, because of recurring attacks of upper abdomi-

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Submitted March 9, 1960.

nal pain since January 1955. Pain had been present for six weeks; then it became severe and the patient was admitted to Scripps Memorial Hospital, La Jolla, California.

The pain was described by the patient as a constant gnawing aching beneath the left costal margin, extending posteriorly to the midback. It was not affected by movement of the spine during work as a hospital attendant or by ingestion of foods. It was partially relieved by assuming a hunched forward position, and by taking narcotic drugs by mouth.

The patient could not recall any significant injury to the abdomen. She had had subtotal hysterectomy for benign pelvic disease in 1946 and lumbar laminectomy for ruptured intervertebral disc in 1952, both elsewhere. Partial intestinal obstruction due to postoperative pelvic adhesions required enterolysis and excision of the cervical stump in 1954 at Scripps Memorial Hospital. In a review of the hospital records it was noted that the patient had chronic endocervicitis without evidence of malignant change. The patient said that her weight had been stable at 152 pounds. She was 69 inches tall. Her general health had been good in recent years except for pneumonia in 1950, and frequent upper respiratory tract infections following that illness.

Review of family history elicited that the patient's mother was mildly diabetic, and there was a history of carcinoma of the rectum in a grandparent and of carcinoma of the breast in two maternal aunts.

The patient said she could feel a lump inferior to the xiphoid process when she breathed deeply, and on physical examination in the hospital a vaguely outlined slightly tender smooth spherical mass, 3 to 4 cm. in diameter, was palpated inferior and posterior to the xiphosternal junction. Upon light palpation of the left anterior chest, moderate tenderness and paresthesia was noted from the left sternal border to the midaxillary line, suggesting cutaneous hyperesthesia.

Results of blood examination and urinalysis were within normal limits, and a serologic test was negative for syphilis. Serum amylase preoperatively was 120 units (Somogyi, normal 40-110). Posteroanterior and lateral radiographs of the chest showed no mediastinal abnormalities (Figure 1). Cardiac size and contour and lung fields were normal. Plain films of the abdomen revealed three 1 mm. areas of calcification adjacent to the body of the second lumbar vertebra which were interpreted as ligamentous calcifications. The stomach was filled with air in an attempt to outline the palpable mass in the epigastrium. X-ray studies showed the spleen and kidneys to be of normal size and position but the mass was not discernible.

Diagnostic pneumoperitoneum was then accomplished with introduction of 300 milliliters of atmospheric air into the free peritoneal cavity. Roentgenograms with the patient in oblique position showed a 3 to 4 cm. spherical lesion at the level of the diaphragm at its anterior insertion (Figure 2).

Confirmation of the questionable epigastric mass by means of diagnostic pneumoperitoneum prompted exploratory laparotomy on August 13th, 1956, under general anesthesia.

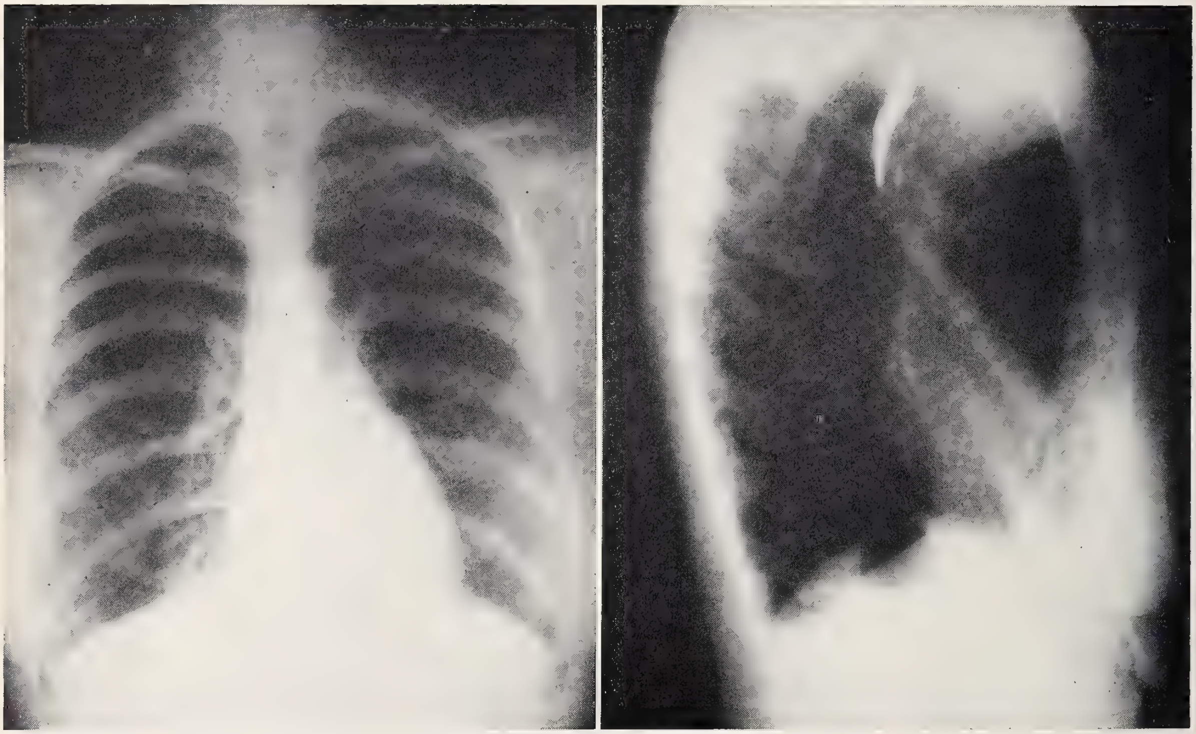

Figure 1.—*Left:* Postero-anterior chest radiograph. *Right:* Lateral chest radiograph. No abnormalities of the mediastinum, heart shadow or lung fields are visible on the plain roentgenograms.

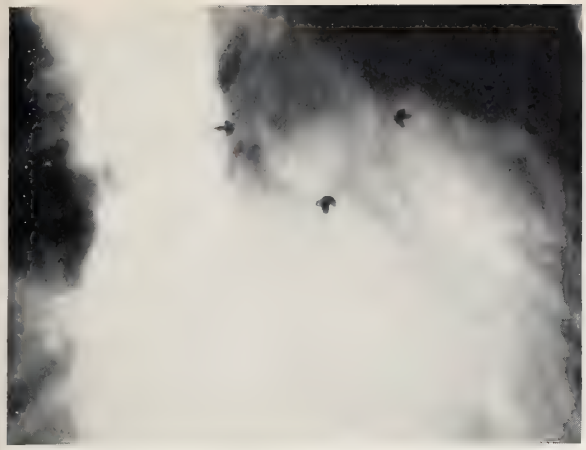

Figure 2.—Oblique positioning of the patient after pneumoperitoneum revealed a 3x5 cm. radiodensity (indicated by arrows) at the level of the diaphragm at its anterior (sternoxiphoid) insertion.

A midline vertical incision from the sternoxiphoid junction to the umbilicus permitted splitting of a stubby xiphoid process to the inferior sternal border. The tendinous insertion of the diaphragm to the xiphoid process and inferior sternum was stretched by a tense, bulging tumor which also stretched the parietal peritoneum in the midline. The spherical, thin-walled, tense cyst of 3x5 cm. was removed intact from the inferior anterior mediastinum, including the adherent edge of thinned diaphragm.

The specimen (Figure 3) consisted of a unilocular, thin-walled smooth-lined cyst filled with clear watery fluid. The external surface presented fibrofatty tags. The wall was paper-thin except for an area 2 cm. in diameter where it was thickened to as much as 2 mm., which appeared to be due to skeletal muscle on the external surface. Examination of microsections (Figure 4) showed the specimen to be a cyst lined by a single layer of mature mesothelial cells supported by loose areolar tissue, accompanied by skeletal muscle bundles and adipose tissue.

The postoperative course was uneventful except for mild deep vein thrombophlebitis in the lower left extremity, treated by elastic support and anticoagulant therapy for three weeks.

DISCUSSION

Cysts of the mediastinum were reported infrequently until Ringertz and Lidholm[10] reported 13 cases in 1956, which brought the totals reported in the medical literature to 31 pericardial cysts and 11 mediastinal lymphangiomas. Undoubtedly many patients with such lesions are not operated upon, particularly if diagnosis can be established by other means, such as thoracoscopy as suggested by Schein,[11] and many cases obviously are not reported. Emphasis in recent years, however, has been toward prompt removal of intrathoracic neoplasms (Lam,[8] 1947; Blades,[1] 1949; Hirschfield,[5] 1951). Accordingly, the reported incidence of mediastinal cysts as a cause of intrathoracic radiodensity varies from that of Blades' report[1] of 10 per cent to Bradford, Mahon, and Grow's report[2] of 20 per cent. Brewer and Dolley[3] observed that mass surveys employing chest roentgenograms revealed as many mediastinal tumors as cases of pulmonary tuberculosis. The further reporting and differentiation of mediastinal cysts is difficult since some observers recognize pericardial diverticulae as distinct from pericardial cysts, and many reports include cysts of "unclassified origin." The latter group of lesions

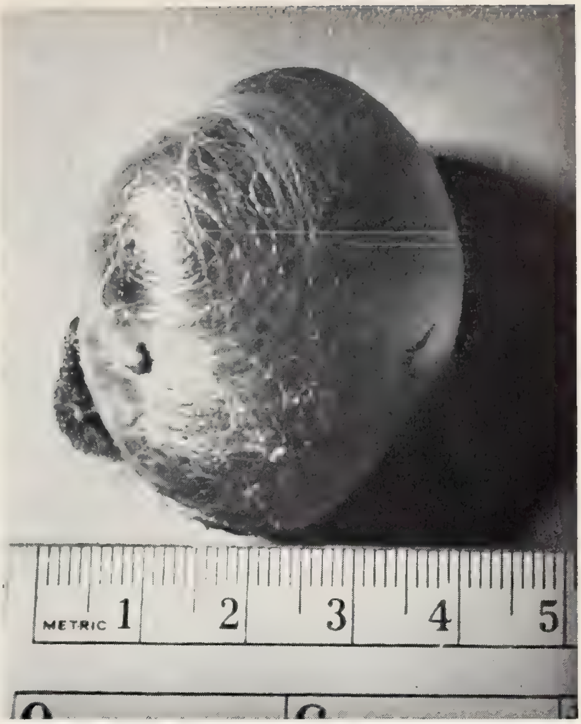

Figure 3.—The gross specimen revealed a thin-walled unilocular cyst 4.5x3.5x2.0 cm. containing crystal-clear watery fluid which transmits light.

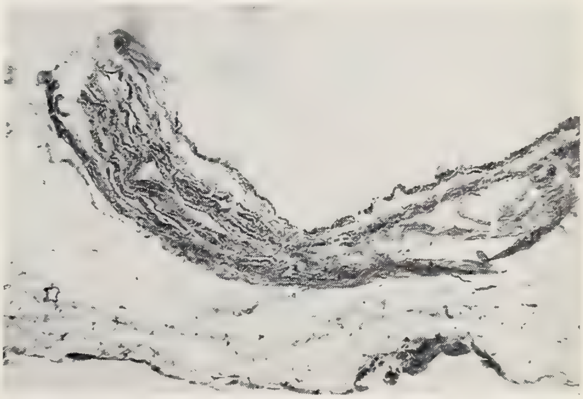

Figure 4.—Photomicrograph of the wall of the cyst (magnification 430×) shows the cyst lined by a single layer of mature mesothelial cells, supported by loose areolar tissue.

predominately appear in the anterior superior mediastinum, in contrast to anterior inferior pericardial relations of the other two categories (pericardial cysts or pericardial diverticulae). No instance of a pericardial cyst appearing infraxiphoid was found in a review of the literature of this subject. The majority of pericardial cysts are found at the cardiophrenic angles (17 of 29 cases in one series), occurring about twice as frequently from the right angle as from the left (17 and 19 respectively). A minority of pericardial cysts have an attachment higher on the anterior mediastinum (5 of 29 cases reported by Lillie, McDonald, and Clagett[9]).

Age of the patient at time of discovery of the mediastinal tumor is of some diagnostic importance. In childhood, the tumor is more likely a primary tumor of the pericardium than a cyst. No pericardial cysts have been reported in patients under 27 years of age. One of the early reports of "lymphatic cyst" was from an autopsy of an 86-year-old woman (Dufour,[4] 1929). Most observers now consider pericardial diverticulae and percardial cysts as the same entity (Hirschfield[5]; Lillie, McDonald and Clagett[9]; and Leahy and Culver[7]). Differentiation of pericardial cysts from lymphangiomatous cysts has been clarified by reserving the former diagnosis for unilocular cysts (as in the present case), and the latter designation, lymphangiomatous cysts, for multilocular cysts.

Few symptoms were attributed to mediastinal cysts by early investigators, but Kisner and Reganis,[6] writing in 1950, said that symptoms occurred more frequently than was usually recognized. The cause for remission of the patient's symptoms in the present case was not apparent, but observation suggested that pain in the upper abdomen could be ascribed to the mediastinal cyst. Perhaps cutaneous hyperesthesia of the left chest wall was attributable to parietal peritoneal stretching. Pain of mediastinal origin has been defined as a vague pain by many observers, and clinical studies indicate that patients have difficulty localizing and accurately defining the nature of pain originating from the mediastinum. In no case in the reported experience of Lillie, McDonald, and Clagett,[9] and Kisner and Reganis[6] did palpation at physical examination indicate the possibility of the presence of a pericardial cyst. In the present case, diagnostic pneumoperitoneum was of help in objectively demonstrating a lesion of the anterior inferior mediastinum.

SUMMARY

In the case of mesothelial cyst of the anterior inferior mediastinum, probably of pericardial origin herein reported, the lesion was suspected from observations on physical examination. A unilocular cyst was palpated high in the epigastrium when the patient breathed deeply.

Mediastinal cysts, including pericardial cysts, can cause bizarre symptoms, including abdominal (epigastric) pain and cutaneous hyperesthesia.

Diagnostic pneumoperitoneum is of help in objectively demonstrating questionable lesions at the level of the diaphragm, and aided in the diagnosis of a pericardial cyst.

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Hydatidiform Mole Complicated by the Use of Progestogens

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THE DEVELOPMENT in the past five years of many steroid compounds having progestational properties has been greeted with enthusiasm. They have been tested by many investigators and found to produce the expected progestational manifestations, such as thermogenic effect, secretory changes in estrogen-primed endometrium, induction of withdrawal bleeding in castrate women primed with estrogen and in amenorrheic women with adequate endogenous estrogen production.[1,4,5,6]

I believe that in the case here reported the use of potent steroids so greatly enhanced the complications of a hydatidiform mole that the patient's life was jeopardized.

REPORT OF A CASE

The patient, a 26-year-old pregnant Caucasian woman with three children, whose last menstrual period occurred on March 23, 1958, was first observed in consultation on August 28, 1958. She had had an uneventful pregnancy until May 21, at which time she noted the onset of vaginal bleeding. From

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Submitted November 12, 1959.

then on, spotting of blood occurred almost daily. The physician attending her had put her in hospital May 31. Administration of progesterone in oil, 100 mg. twice daily, was begun, as well as penicillin 800,000 units with 1.0 gm. streptomycin, given intramuscularly. Later the same day, Nugesterol® tablets* were prescribed, two immediately and one daily, as well as 25 micrograms of liothyronine (Cytomel®) a day by mouth.

Four days later the progesterone and corpus luteum injections were discontinued and norethindrone (Norlutin®), 5 mg. daily by mouth, was started. The patient was discharged from the hospital on June 5, 1958, with prescription of norethindrone, 5 mg. daily, and ethisterone, 15 mg. daily, until July 14. During this five-week period vaginal spotting continued although by the end of that time the uterus was palpated three fingerbreadths above the umbilicus. In the time since leaving the hospital the patient had also been given a sulfa vaginal cream; vitamin K, 5 mg. intramuscularly; and on two occasions Adrenosem® (adrenochrome monosemicarbazone sodium salicylate complex) one ampule containing 5 mg.

The brownish vaginal discharge was still present when the patient was again examined July 14, and 100 mg. of progesterone was given intramuscularly. At the same time the prescribed amount of norethindrone was increased to 5 mg. twice daily. On July 17, it was thought the fetal heart was heard. Again Adrenosem,® 5 mg., and vitamin K, 5 mg., were given intramuscularly. The patient was seen twice more between July 14 and August 28. Penicillin, 600,000 units intramuscularly, was given again on August 12 and a sulfa vaginal cream was prescribed for what was felt to be purulent endocervicitis.

On the morning of August 28, the patient reported a rather precipitous onset of acute, heavy vaginal bleeding and was admitted to the hospital in early hemorrhagic shock. The uterus was of a size consistent with the sixth month of gestation. Hydatid-like cysts were being expelled from the vagina. Because of difficulty in procuring adequate amounts of blood for transfusion, hysterotomy rather than curettement was decided upon. Vaginal bleeding continued at a rapid rate after transfusion of two units of blood and when the patient was moved to the operating room the blood pressure dropped to 80/40 mm. of mercury. Two additional units of blood were given and operation was begun.

The uterus was of the usual contour and size of a gravid uterus at approximately six months of gestation. The bladder flap was dropped from the lower uterine segment and the uterus was opened in the manner of a classical low cesarean section. Approximately five pounds of tissue (hydatidiform mole) was removed, and bleeding from the uterus was minimal. On attempting to trim away what remained of the shaggy decidual-like material, it was noted that it could be removed only in fragments and that in each area where this material was stripped from the uterus, bleeding swiftly increased. It appeared grossly that the decidual tissue was infiltrating the myometrium and, for this reason and because hemorrhagic shock already had occurred, it was deemed imperative to remove the uterus. This was done, the cervix also being removed without unnecessarily prolonging the operation. The loss of blood connected with this procedure was not great. The ovaries were approximately 9 cm. in diameter and both contained multiple cysts. The ovaries and tubes were left in place and the procedure was completed in the manner of a total abdominal hysterectomy.

A PARTIAL LIST OF AVAILABLE COMMERCIAL PROGESTOGENS

Norlutin — 17 - alpha - ethynil - 19 - nortestosterone (norethindrone) — (Parke, Davis and Company, Detroit. Also, Suntex Laboratories, Mexico City.)

Enovid—Norethnodrel with ethynil estradiol 3-methyl ether—(G. D. Searle and Company, Chicago.)

Colprosterone—Progesterone vaginal suppositories—(Ayerst Laboratories, New York.)

Prodox—17-acetoxyprogesterone—(The Upjohn Company, Kalamazoo, Mich.)

Delalutin—17-alpha-hydroxyprogesterone caproate—(E. R. Squibb & Sons, New York.)

Nilevar — 17-alpha-ethyl-17-hydroxy-norandrostenone —(G. D. Searle & Co., Chicago.)

Pranone—17-ethinyl testosterone (ethisterone) — (Schering Corporation, Bloomfield, N. J.)

Lutocylol—17-ethinyl testosterone (ethisterone) — (Ciba, Summit, N. J.)

Braxorone — 9-alpha-bromo-11-ketoprogesterone — (E. R. Squibb & Sons, New York.)

The following day the blood pressure was 130/80 mm. of mercury and the pulse rate approximately 110. The packed cell volume was 23 per cent of the whole blood. The patient received a total of three units of blood after operation, making a total of seven units. The postoperative course was completely uneventful. Vaginal spotting continued for a week, then stopped and did not recur. After leaving the hospital the patient felt well, had no complaints referrable to the urinary tract and, at last report, had gained 11 pounds in body weight to 105 pounds.

On examination three months after operation, the ovaries were noted to be not more than 3 cm. in diameter. There were no abnormal masses. The result of a serum pregnancy test was negative. The packed cell volume was 39 per cent.

The pathologist reported: "Syntytial type cells as well as those of the Langhans layer exhibit a uniform histologic appearance and nuclear structure in all zones with no evidence of atypical appearance. The entire pattern is that of a hydatidiform mole structure. There is no evidence of myometrial invasion present."

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*Combination of ethisterone, 15 mg., with vitamins C, K and E.

DISCUSSION

The incidence of a hydatidiform mole is reported variously, from 1 in 728 pregnancies to 1 in 4,800 pregnancies.[2] In the case herein reported, uterine growth consistently was noted to be seemingly greater than was consistent with the gestational dates. Practically constant vaginal spotting for a period of three months was noted, as well as a serosanguinous discharge which the attending physician attributed to infection. A discharge of this kind is reported to occur in one-third of all cases of hydatidiform mole. Spontaneous expulsion of the mole occurs most frequently in the third or fourth month of gestation but, in rare instances, not until the fourteenth or even the seventeenth month after conception.[2] (By that time of course the products of conception are known to be abnormal.) The uterus grows at a sporadic rate; it may be term size at the end of two or three months, or it may be smaller than is consistent with the duration of pregnancy. The significant point in the present case, however, is that the patient continued to have spotting and vaginal discharge for three months before passing some tissue that was obviously that of a mole. The top of the uterus at that time was 24 cm. above the symphysis. The patient had been receiving progesterone, as well as 5 mg. of norethindrone and 15 mg. of ethisterone daily for a period of six weeks; then 15 mg. of ethisterone and 10 mg. of norethindrone daily for an additional six weeks.

Of course, one can only speculate that these progestogens delayed abortion in this case but reports by other observers strongly support the conjecture.[7,8] It is generally felt that 10 mg. of norethindrone a day gives the same effect as 50 mg. a day of progesterone. Indeed, several investigators who have reported on the use of progestogens in threatened abortion have noted that missed abortion can well be considered a sequel to the use of progestogen therapy.[7,8]

It would appear, from the case presented, that there may be real danger in connection with the use of progestogens: perhaps certain kinds of abnormal pregnancy may continue for longer periods than they normally would, owing to the effects of the potent progestogens now available (see list on page 43). Malignant degeneration of placental tissue did not develop in the present case; but one may speculate that it might occur, eventually, in tissue that might better have been expelled earlier. A hysterectomy might not have been necessary had the spontaneous termination of pregnancy been permitted to continue. It appears that the incidence of missed abortions can be expected to be between 20 and 40 per cent when therapeutic dosages of potent progestogens are administered after spontaneous abortion threatens.

SUMMARY

In the case reported, multiple progestogens were used and there was prolonged inhibition of spontaneous expulsion of the products of conception. This resulted in a tremendous loss of blood and a life-threatening situation with hydatidiform molar degeneration of the placental tissue.

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Spontaneous Carotid-Cavernous Fistula Due to Ruptured Cerebral Aneurysm

JAMES W. MARKHAM, *M.D.*, San Jose

CONSIDERING THE FREQUENCY of aneurysms arising from the infraclinoid portion of the internal carotid artery, it is surprising that spontaneous rupture of these lesions into the cavernous sinus does not occur more often. Walker[8] stated that the intracavernous segment of the internal carotid artery is predisposed to fistula formation by an inherent weakness in its structures. Locke[5] in a review of 544 cases of carotid-cavernous fistula reported in the literature, noted that trauma was the cause in 76.8 per cent. Although there remains a considerable proportion due to other factors, relatively few cases have been reported in which spontaneous rupture of an aneurysm was the immediate cause. The following case illustrates this less well-known feature of carotid-cavernous fistula.

REPORT OF A CASE

The patient was a 73-year-old housewife who was first observed January 12, 1956, on referral from another physician. Two weeks previously she had been awakened at night by intense pain in the left orbitofrontal region. Not until morning did she

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Submitted October 28, 1959.

notice that ptosis had developed, for she had held her hand over the affected eye because of pain. In the next 24 hours she vomited frequently. Then a throbbing sensation in her head began, but she did not interpret it as a bruit. She did not complain of diplopia, although she admitted that on elevating her upper lid manually she "could not see so well" with the affected eye. A week after onset of symptoms she noticed that the left eye was quite reddened. During the second week she began to feel much better but became concerned because of increasing congestion of the orbit and protrusion of the eye. Except for an appendectomy in 1922 and removal of a nodule from the thyroid gland in 1945 she had been in excellent health all her life.

On examination moderate exophthalmos of the left eye was noted, but pulsations were barely perceptible. The lid was completely closed. When the upper lid was retracted, pronounced congestion of the conjunctiva and moderate chemosis were observed. The pupil was moderately dilated and irregular in shape. It did not react to direct stimulation, and the consensual reflex was also absent. The globe was fixed in abduction. The optic disc was slightly indistinct and decidedly hyperemic. Vision was greatly reduced and the peripheral field of the left eye was constricted. Orbital auscultation revealed a loud, harsh, machinery-type murmur transmitted over the entire head, but especially over the left frontal and maxillary sinuses and left temporal fossa. Compression of the left common carotid artery greatly decreased the intensity of the bruit. Compression of the corresponding vessel on the right did not alter the sound. Pulsation of the right common carotid artery was palpably much greater than that of the left, while the external jugular vein on the left was at least twice the size of the like vessel on the right when the patient was supine. Hypesthesia of the left supraorbital area and frontal scalp was noted. The corneal reflex was decreased. The superior oblique muscle was paralyzed.

The blood pressure was 120/80 mm. of mercury. The patient appeared much younger than her actual age, and the peripheral vessels were remarkably soft.

On admission to hospital January 15, 1956, routine x-ray films of the skull and chest showed no abnormality. A left cerebral arteriogram the next day showed a large dome-shaped aneurysm 1.0 cm. in diameter arising from the floor of the middle fossa with its apex at the level of the diaphragma sellae (Figure 1). The details of the base of the lesion could not be delineated clearly, for the dye within the cavernous sinus obliterated the carotid siphon. The ophthalmic veins were readily distinguished. In the early phase no filling of the anterior or middle cerebral arteries was detected but a trace of dye was seen in the middle cerebral artery in the late films. A right cerebral arteriogram was then performed, revealing a quite normal pattern without evidence of cross-communication (Figure 2). Two days later digital compression of the vessels in the neck did not cause discomfort. The left common carotid artery could be compressed for ten minutes without visible effect.

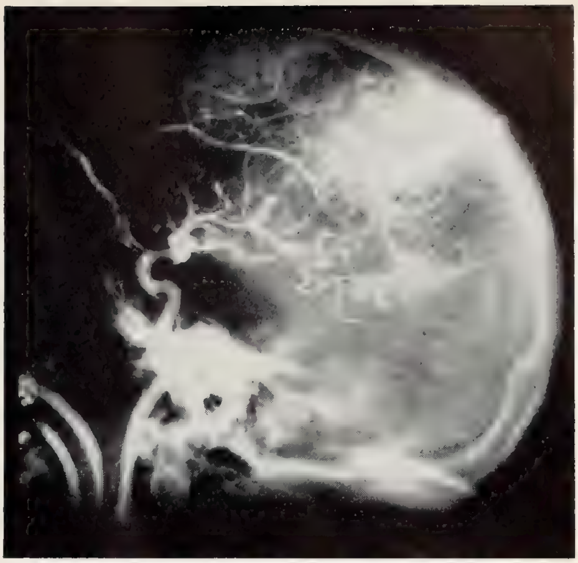

Figure 1.—Right cerebral arteriogram (unaffected side) showing normal vascular patterns.

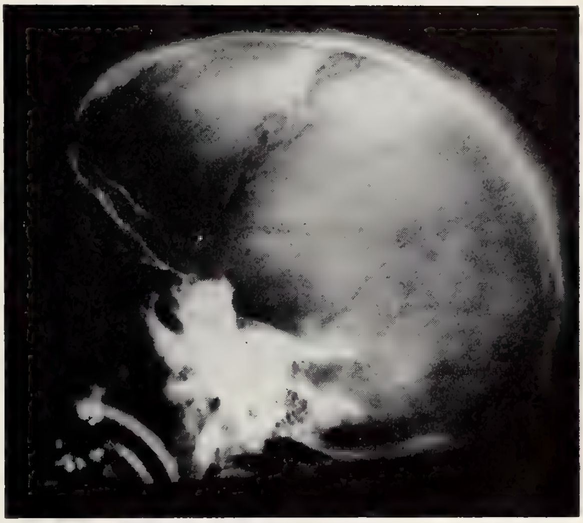

Figure 2.—Left cerebral arteriogram (unretouched) showing location of the aneurysm and nonfilling of the carotid branches.

At operation on January 19, the carotid bifurcation was exposed. The external carotid artery was ligated just proximal to the external maxillary takeoff. The internal carotid artery was then occluded with a clamp for ten minutes without change in the pulse, respiration or blood pressure. The ligature was then made proximal to the clamp, and the wound was closed.

The patient was dismissed from the hospital January 26 with pronounced lessening of orbital congestion and exophthalmos, and much relief of

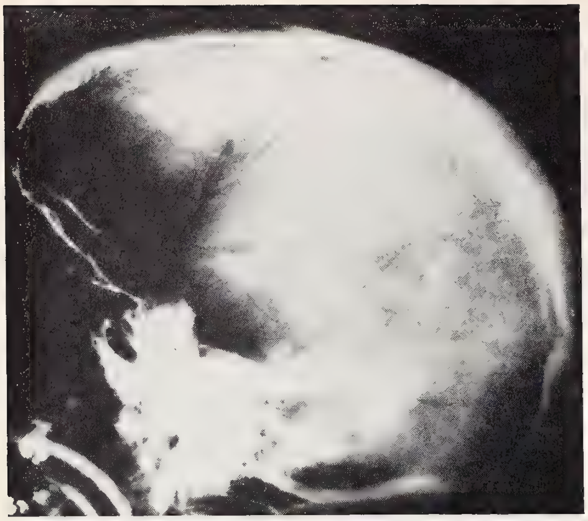

Figure 3.—Left cerebral arteriogram (retouched) to demonstrate more clearly the dome-shaped aneurysm involving the cavernous sinus.

the ocular and supraorbital pain. The bruit could still be heard but was much less intense. Soon thereafter proptosis became more pronounced with increase in orbital congestion. Considerable ocular pain returned, accompanied by nausea. Extensive subconjunctival hemorrhage developed in the left eye.

The patient was readmitted to hospital February 20, 1956. At that time the bruit could not be heard. There was complete ptosis of the left upper lid, with proptosis estimated at 3 to 4 mm. Extensive subconjunctival hemorrhage was noted. The left eye was fixed in position. The cornea was opaque and edematous due to increased intraocular tension. The pupil was irregular, semidilated and did not react to light. No fundus details were discernible due to corneal opacity. Visual acuity of the left eye was reduced to seeing only hand movements. A tentative diagnosis of hemorrhage into the left orbit and acute glaucoma was made. Treatment was suffusion of the left eye with pilocarpine hydrochloride 2 per cent solution every two hours, and administration of Diamox® (acetazoleamide) 250 mg. orally three times.

The swelling of the lid diminished gradually and the intraocular tension decreased. By the end of the first week it was possible to see that extensive hemorrhage into the left vitreous had occurred. At the time of dismissal on March 7, 1956, the patient still had a fixed pupil and external ophthalmoplegia but proptosis had lessened. The vitreous had cleared somewhat and peripheral retinal vessels were visible in one quadrant. By May 15, 1956, the patient could read large print with her left eye. Proptosis had completely subsided. The left pupil was still fixed, but the eye could be adducted to the central position.

In October 1956 the patient collapsed while in church and was briefly unconscious. Recovery was prompt, and there was no apparent change in her physical condition. In November 1957 she had a bout of supraorbital pain on the left for two weeks. This subsided after six injections of vitamin B_{12}, 1,000 micrograms per dose three times weekly for two weeks.

At the time of last ophthalmologic examination, June 6, 1958, the left pupil was still irregular and fixed in semidilation. The optic disc was pale and slightly cupped. Intraocular tension was normal. Peripheral fields in the left eye showed concentric constriction. Corrected visual acuity in the left eye was 20/100. When the patient was seen last, February 2, 1959, her condition was unchanged. On November 11, 1959, she died three hours after being injured in a vehicle accident. At autopsy the cause of death was found to be massive hemothorax. There was also a simple fracture of the left temporal bone. A thin layer of blood was dispersed over the left frontotemporal area of the brain but the aneurysm was intact.

On examination of the carotid siphon, a large saccular aneurysm with thick walls projecting forward and laterally into a concavity in the sphenoid bone was noted. The dome-like fundus of the aneurysm projected upward alongside the sella turcica but it was completely intact and the lumen patent. Its interior communicated with the carotid artery by a generous opening. The carotid system distal to the aneurysm was patent.

DISCUSSION

In this case the appearance of the patient was typical of pulsating exophthalmos. Spontaneous rupture of a preexisting cerebral aneurysm into the cavernous sinus was the apparent etiological basis. Nonfilling or incomplete filling of the vascular tree above the aneurysm on arteriography in the absence of pyramidal tract findings indicated that the internal carotid artery could probably be ligated with safety, which agrees with the opinion expressed by Koskinen[4] in a report of five similar cases. Persistence of the bruit following ligation indicated some cross-circulation, too minute to appear in the arteriogram. The partial recurrence of symptoms a month after ligation was probably due to retroorbital hemorrhage with secondary glaucoma and vitreous hemorrhage. This appeared to have been followed by complete occlusion of the remaining fistulous connections.

Martin and Mabon[6] in 1943 reviewed all reported cases of pulsating exophthalmos in the literature. They tabulated 812 cases and added five that they had observed. They did not cite rupture of a cerebral aneurysm as the etiological factor. However, Elliot[2] in 1954 reported ten cases, but trauma was the causal factor in each. Glaucoma occurred in three of these cases and in one enucleation was necessary. Boyes and Ralph[1] in 1954 described two cases of spontaneous carotid-cavernous fistula. In neither case was arteriography performed nor was any surgical treatment rendered. Both patients recovered completely. Tamler[7] in 1953 reported a case in which the fistula was on the side opposite the exophthalmos, and he reviewed four other such cases in the literature.

In a series of 24 cases of carotid-cavernous fistula reported by Walker,[8] 14 were due to trauma and ten were spontaneous in onset. This is an unusually high incidence of the latter variety. Florin[3] in 1958 reported a case with bilateral aneurysms of the internal carotid arteries and spontaneous carotid-cavernous fistula in a 72-year-old woman and was able to find reports of only 15 similar cases in the literature.

It is likely that with the increasing number of patients reaching the older age groups, spontaneous carotid-cavernous fistulas will be seen more frequently.

SUMMARY

A case of spontaneous carotid-cavernous fistula is presented. The unusual features were the relationship to an aneurysm of the left internal carotid artery and complications of orbital hemorrhage, glaucoma and vitreous hemorrhage. Arteriography confirmed the lesion. Ligation of the cervical segment of the internal carotid artery was performed with satisfactory result.

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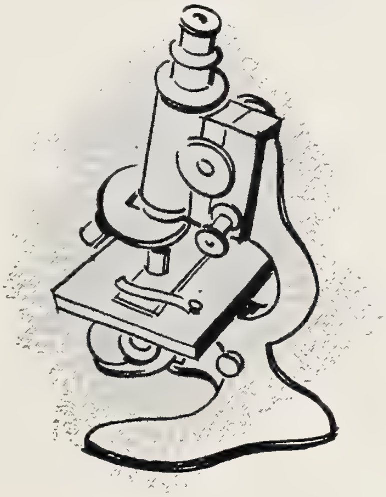

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THE RESPONSIBILITY FOR MEDICAL CARE

The following statement of policy was adopted by the House of Delegates of the American Medical Association at its recent annual meeting in Miami Beach:

"Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government, in the above order. The determination of medical need should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

EDITORIAL

The A.M.A. 1960 Session

In the heat and humidity of Miami Beach, which even the constant breeze from the Gulf Stream could not counteract, the American Medical Association held its 1960 Annual Session in mid-June.

Whether because of weather conditions, a strike by airline pilots or other reasons, or the fact that it was held in a corner of the country, the meeting fell far below expectations and the experience of former years. Attendance was minimal and the general atmosphere seemed lacking in enthusiasm, despite an excellent scientific program and the usual stupendous array of scientific and technical exhibits.

Even on the business side, handled by the House of Delegates, lassitude was the order of the day. Where in past years there have generally emerged one or more issues of importance, the grist fed into the policy-making mill this year was relatively poor in both quality and quantity.

About 50 resolutions were placed before the House of Delegates, covering a multiplicity of subjects but mainly not constituting matters of prime importance. The one possible exception was in the field of health care for the aged, where several states made proposals for the establishment of A.M.A. actions or attitudes.

Some of the more important items handled by the House are summarized below.

Prepayment Congress—The House of Delegates agreed that more sessions should be held for the discussion of prepayment health insurance, with consumers, labor, management and insurance interests participating. Such a conference was recently held in Chicago and the results were gratifying to the point of planning for further regional gatherings along the same lines.

Physicians and Social Security—The House reaffirmed the stand taken on several previous occasions, in opposition to the compulsory inclusion of physicians under the OASDI provisions of the Social Security Act. At the same time this action was being taken in Miami Beach, the Ways & Means Committee of the House of Representatives in Washington was reporting out an omnibus Social Security amendment bill which *would require* physicians, as self-employeds, to come under the Social Security banner. Apparently the voice of the A.M.A. in Florida did not carry to Washington.

Tax Reform—The House considered a resolution to urge A.M.A. support of a bill now before Congress to reduce corporate and personal income taxes and to establish more liberal depreciation allowances for tax purposes. While the House did not approve the resolution with these stated objectives, it did pass a substitute measure designed to "return to the states and their political subdivisions their traditional revenue sources and to allow American citizens to enjoy the fruits of their labor." Here again it is doubtful that the A.M.A. voice carried to the national capitol.

Physicians' Services—A resolution was adopted to establish the phrase "physicians' services" as a part of the medical lexicon. The object of this proposal is to set forth these services as the professional portion of the total health care of the patient. If this can be accomplished, the public may be made aware of the fact that the total costs of health care include many costs in addition to the sum received by the physician.

Health Care of the Aged—This topic attracted more resolutions than any other at the Miami Beach session. In addition to several anti-Forand resolutions, specific proposals were advanced by Nebraska, District of Columbia, Tennessee and California.

These resolutions were referred to several reference committees and were reported upon by two. In the main the reference committee reports, adopted by the House of Delegates, followed the philosophy, if not the exact language, of the California resolution. Quotations from these reports are given here to show the parallel thinking of the A.M.A. House of Delegates and the C.M.A. Council, which approved the original resolution and asked that it be placed before the A.M.A.

One reference committee urged that the policy of the A.M.A. be as follows: "Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government in the above order.

"The determination of medical needs should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved.

"The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

From another reference committee came approval of the California resolution, which stated the same principles for the allocation of responsibility. This resolution showed that where the individual is able to provide for his own health care, "government at any level has no role." Continuing through the same steps of governmental echelons as shown above, the resolution stated that "only as a last resort is federal government participation warranted."

Also included in the resolution was the proposal that the A.M.A. "initiate a nonpartisan open assembly to which all interested representative groups are invited, for the purpose of developing the specifics of a sound approach to the health services and facilities needed by the aged, and that thereafter the American Medical Association present its findings and positive principles to the people."

While it is gratifying to have one's own suggestions approved by the national body, it is even more satisfying to see the representatives of the nation's physicians come to grips with a problem of national importance and come up with a positive program for handling it.

The resolutions approved by the House of Delegates run completely contrary to Mr. Forand's approach. The Congressman took the easy way out, by assuming that Government must intervene. If his views were to carry through Congress, the country would have upon its back a Social Security System that could have no intention, certainly, of ever getting smaller. There are already grave doubts in the minds of many thinking persons as to the soundness, both financial and philosophical, of the Social Security System. With a Forand-type hospital-surgical-nursing home amendment tacked on, the system would straddle over an even larger area and create still further tax problems for future generations.

The members of the A.M.A. House of Delegates are to be congratulated on their prompt recognition of a social problem of the day, on their calm appraisal of it in terms of human life and human dignity and on their willingness to submit the matter to the cold and searching review envisaged in the resolutions adopted.

It must be said that the medical profession encourages personal and individual initiative and, at the same time, recognizes the true role of Government when it is necessary to abdicate personal responsibilities because of inability to discharge them. Government must remain the servant of the people, not the master.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Actions of the A.M.A. House of Delegates

This summary from the Executive Vice-President's office of the American Medical Association covers only a few of the many important subjects dealt with by the House and is not intended as a detailed report on all actions taken.

Health care for the aged, pharmaceutical issues, occupational health programs, relations with allied health groups and relations with the National Foundation were among the major subjects involved in policy actions by the House of Delegates at the American Medical Association's 109th Annual Meeting held June 13 through 17 in Miami Beach.

Dr. Leonard W. Larson of Bismarck, N. D., former chairman of the A.M.A. Board of Trustees and of the A.M.A. Commission on Medical Care Plans, was named president-elect by unanimous vote. Dr. Larson will succeed Dr. E. Vincent Askey of Los Angeles as president at the Association's annual meeting in June, 1961, at New York City.

The A.M.A. 1960 Distinguished Service Award, one of medicine's highest honors, was given to Dr. Charles A. Doan, who will retire next year as dean of the Ohio State University College of Medicine and director of the Health Center in Columbus, Ohio.

Total registration through Thursday, with half a day of the meeting still remaining, had reached 19,107, including 8,706 physicians.

Health Care for the Aged

After considering a variety of reports, resolutions and comments on the subject of health care for the aged, the House of Delegates adopted the following statement as official policy of the American Medical Association:

"Personal medical care is primarily the responsibility of the individual. When he is unable to provide this care for himself, the responsibility should properly pass to his family, the community, the county, the state, and only when all these fail, to the federal government, and then only in conjunction with the other levels of government, in the above order. The determination of medical need should be made by a physician and the determination of eligibility should be made at the local level with local administration and control. The principle of freedom of choice should be preserved. The use of tax funds under the above conditions to pay for such care, whether through the purchase of health insurance or by direct payment, provided local option is assured, is inherent in this concept and is not inconsistent with previous actions of the House of Delegates of the American Medical Association."

The House also urged the Board of Trustees "to initiate a nonpartisan open assembly to which all interested representative groups are invited for the purpose of developing the specifics of a sound approach to the health service and facilities needed by the aged, and that thereafter the American Medical Association present its findings and positive principles to the people."

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In connection with an educational program regarding the aged, the House declared that "the American Medical Association increase its educational program regarding employment of those over 65, emphasizing voluntary, gradual and individualized retirement, thereby giving these individuals not only the right to work but the right to live in a free society with dignity and pride."

Earlier, at the opening session, Dr. Louis M. Orr, retiring A.M.A. president, had asked the House to go on record favoring more jobs for the aged, voluntary retirement and a campaign against discrimination because of age, whether it be 40 or 65. The House also gave wholehearted approval to Dr. Askey's urging that state medical societies take an active part in state conferences and other planning activities preceding the January, 1961, White House Conference on Aging.

Pharmaceutical Issues

In the pharmaceutical area the House took two actions—one regarding mail order drug houses and the other involving the development and marketing of pharmaceutical products.

The House agreed with representatives of the pharmacy profession that the unorthodox practice of mail order filling of prescription drugs is not in the best interest of the patient, except where unavoidable because of geographic isolation of the patient. The statement pointed out that in this process the direct personal relationship, which exists between the patient-physician-pharmacist at the community level and which is essential to the public health and the welfare of patients, is lost.

The House also directed the Board of Trustees to request the Council on Drugs and other appropriate Association councils and committees "to study the pharmaceutical field in its relationship to medicine and the public, to correlate available material, and after consultation with the several branches of clinical medicine, clinical research, and medical education and other interested groups or agencies, submit an objective appraisal to the House of Delegates in June, 1961." The statement pointed out that certain proposals have been made which, if carried out, might impair the future of pharmaceutical research and development, thus retarding the progress of scientific therapy. It also said that the services of the pharmaceutical industry are so vital to the public and to the medical profession that an objective study should be made.

Occupational Health Programs

The House approved a revised statement on the "Scope, Objectives and Functions of Occupational Health Programs," which was originally adopted in June, 1957. The new statement contains no fundamental alterations in A.M.A. policy or ethical relationships, but it adds important new material on the following points:

1. Greater emphasis on the preventative and health maintenance concepts of occupational health programs.

2. A more positive statement of organized medicine's obligation to provide leadership in improving occupational health services by part-time physicians in small industry.

3. Increased emphasis on rehabilitation of the occupationally ill and injured.

4. Inclusion of the proper use of immunization procedures for employees, as approved by the House in 1959.

5. A more adequate statement on the need for teamwork with lay industrial hygienists in tailoring each occupational health program to the particular employee group involved.

In approving the revised guides for occupational health programs, the House also accepted a suggestion that the A.M.A. Council on Occupational Health undertake a project to study and encourage the employment of the physically handicapped.

Allied Health Groups

The House approved the final report of the Committee to Study the Relationships of Medicine with Allied Health Professions and Services and commended it as "a monumental work." The report covers the present situation, future implications and recommendations, including guiding principles and approaches to activate physician leadership. The House strongly recommended that A.M.A. activity in this vitally important area be continued and it approved the appointment of a Board of Trustees committee to carry on the work.

To develop physician leadership in promoting cooperative efforts with allied health professions and services, the report suggested the following A.M.A. activities:

1. A general conference should be held with allied scientists in the basic medical sciences and related disciplines for discussion of matters of common concern related to the creation of permanent, cooperative activities.

2. Specific exploratory conferences should be held with members of segments of science allied to a given area of medical practice with the national medical organizations concerned.

3. General and specific conferences should be held with professional and technical assistants on education, recruitment and coordination of contributions.

4. Through meetings and publications, reciprocal exchange of information should be provided be-

tween physicians and allied scientists and members of health professions.

5. Effective, continuing liaison should be established between A.M.A. representatives and professional and technical personnel.

National Foundation

The House took two actions involving relations between the medical profession and the National Foundation. It adopted a statement of policies for the guidance of state medical associations and recommended that they be adopted by all component medical societies. These policies cover such subjects as membership of medical advisory committees at the chapter level, the function of these committees, and basic principles concerning financial assistance for medical care, payment for physicians' services and physicians' responsibilities for constructive leadership in medical advisory activities.

In another action the House directed the Board of Trustees to authorize further conferences with leaders in the National Foundation on the problem of poliomyelitis as it relates to the betterment of the public health and to consider further joint action toward the eradication of polio. The House commended the National Foundation for its outstanding service in the attack against poliomyelitis, but pointed out that much work remains to be done in public education, vaccination, continuing assistance for poliomyelitis victims and continued research.

Miscellaneous Actions

In dealing with reports and resolutions on a wide variety of other subjects, the House also:

Strongly reaffirmed its support of the **Blue Shield concept** in voluntary health insurance and approved specific recommendations concerning A.M.A. Blue Shield relationships;

Approved a contingent appointment of not more than six months for **foreign medical school graduates** who have been accepted for the September, 1960, qualification examination;

Agreed that the American Medical Association should sponsor a **second National Congress on prepaid health insurance;**

Approved a Board of Trustees request to the Postmaster General for a stamp commemorating the **Mayo Brothers;**

Decided that the establishment of a home for **aged and retired physicians** is not warranted at this time.

Approved the establishment of a new **"Scientific Achievement Award"** to be given to a nonphysician scientist on special occasions for outstanding work;

Approved the following schedule for future **annual meetings:** Atlantic City, 1963; San Francisco, 1964, and New York City, 1965;

Approved the objectives of the A.M.A. **Commission on the Cost of Medical Care** established by the Board of Trustees and headed by Dr. Louis M. Orr, immediate past president of the Association;

Urged individual members of the Association to take a greater interest and more active part in **public affairs** on all levels;

Reaffirmed its opposition to compulsory inclusion of physicians under Title II of the **Social Security** Act and recommended immediate action by all A.M.A. members who agree with that position;

Called for a review of existing and proposed legislation pertaining to **food and color additives,** with the objective of supporting appropriate measures which are in the public interest;

Urged reform of the **federal tax structure** so as to return to the states and their political subdivisions, their traditional revenue sources;

Asked state and county medical societies to make greater use of A.M.A. **recruitment materials** in presenting medicine's story to the nation's high schools;

Requested the Board of Trustees to initiate a study of present policy regarding the required content and method of preparing **hospital records;**

Commended the Department of Defense and the Air Force for establishing and operating the **Aeromedical Transport Service** and urged that it be maintained at optimum efficiency;

Directed the Board of Trustees to develop **group annuity** and **group disability** insurance programs for Association members; and

Expressed grave concern over the indiscriminate use of **contact lenses.**

Addresses and Awards

Dr. Orr, in his final report to the House at the opening session, urged medical societies to "adopt" rural villages, cities and regions in underdeveloped parts of the world and to send them medical, clinical and hospital supplies.

Dr. Askey, in his inaugural address, declared that medicine faces its greatest challenge in the decade ahead, adding that physicians must prove the effectiveness of medicine practiced in a free society. Dr. John S. Millis (Ph.D.), president of Western Reserve University, Cleveland, Ohio, and guest speaker at the inaugural ceremonies, said the human dilemma of the sixties in an increasing desire for security and authority with a diminishing desire for responsibility.

At the Wednesday session of the House, Dr. Askey urged intensified, accelerated effort in five areas—medical education, preparations for the White House Conference on Aging next January, health insurance and third party relationships, mental health, and membership relations.

The Goldberger Award in Nutrition was presented to Dr. Richard Vilter of the University of Cincinnati. The Boy Scouts of America, celebrating its golden jubilee, presented the A.M.A. with a citation in appreciation of the medical profession's help and support. Dr. B. E. Pickett of Carrizo Springs, Texas, retiring chairman of the Council on Constitution and Bylaws, received an award in recognition of his long service.

Election of Officers

In addition to Dr. Larson, the new president-elect, the following officers were named at the Thursday session:

Dr. William F. Costello of Dover, N. J., vice-president; Dr. Norman A. Welch of Boston, reelected speaker of the House, and Dr. Milford O. Rouse of Dallas, Texas, reelected vice-speaker.

Dr. Gerald D. Dorman of New York City was elected to the Board of Trustees to succeed Dr. Larson, and Dr. James Z. Appel of Lancaster, Pa., was reelected to the Board.

Elected to the Judicial Council, to succeed Dr. Louis A. Buie of Rochester, Minn., was Dr. James H. Berge of Seattle.

Named to the Council on Medical Education and Hospitals were Dr. William R. Willard of Lexington, Ky., succeeding Dr. James M. Faulkner of Cambridge, Mass., and Dr. Harlan English of Danville, Ill., who was reelected.

On the Council on Medical Service, the House reelected Dr. Russell B. Roth of Erie, Pa., and Dr. Hoyt B. Woolley of Idaho Falls.

Dr. George D. Johnson of Spartanburg, S. C., was named to succeed Dr. Pickett on the Council on Constitution and Bylaws.

F. J. L. Blasingame, M.D.
Executive Vice-President
American Medical Association

In Memoriam

Atkinson, Charles Edwin. Died in San Bernardino, May 6, 1960, aged 75. Graduate of the University of Southern California School of Medicine, Los Angeles, 1907. Licensed in California in 1907. Doctor Atkinson was a member of the Riverside County Medical Society.

✣

Atwood, Alton Curtis. Died in Modesto, March 25, 1960, aged 62. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1925. Licensed in California in 1927. Doctor Atwood was an associate member of the Stanislaus County Medical Society.

✣

Berends, Emmo Diedrich. Died in San Diego, April 2, 1960, aged 63, of coronary thrombosis. Graduate of the University of Louisville School of Medicine, Kentucky, 1921. Licensed in California in 1923. Doctor Berends was a member of the San Diego County Medical Society.

✣

Bogen, Esther. Died in Pasadena, March 14, 1960, aged 58. Graduate of the University of Cincinnati College of Medicine, Ohio, 1927. Licensed in California in 1942. Doctor Bogen was a member of the Los Angeles County Medical Association.

✣

Bower, Charles Franklin. Died October 25, 1959, aged 90. Graduate of George Washington University School of Medicine, Washington, D. C., 1907. Licensed in California in 1920. Doctor Bower was a member of the Los Angeles County Medical Association.

Bradley, Millard Calvin. Died April 4, 1960, aged 53. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1937. Licensed in California in 1937. Doctor Bradley was a member of the Los Angeles County Medical Association.

✣

Case, James Thomas. Died in Santa Barbara, May 24, 1960, aged 78, of cancer. Graduate of American Medical Missionary College, Battle Creek, Michigan, and Chicago, Illinois, 1905. Licensed in California in 1921. Doctor Case was a member of the Santa Barbara County Medical Society.

✣

Chan, Hubert. Died in San Francisco, May 16, 1960, aged 29, of granulocytic leukemia. Graduate of the University of Louisville School of Medicine, Kentucky, 1956. Licensed in California in 1957. Doctor Chan was an associate member of the Alameda-Contra Costa Medical Association.

✣

Cunha, Felix. Died in San Francisco, May 17, 1960, aged 64. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1917. Licensed in California in 1930. Doctor Cunha was a member of the San Francisco Medical Society.

✣

Diven, George R. Died in Los Angeles, June 5, 1960, aged 84, of cancer. Graduate of the University of Illinois College of Medicine, Chicago, 1901. Licensed in California in 1910. Doctor Diven was a member of the Los Angeles County Medical Association.

DUBOIS, MORRIS G. Died March 18, 1960, aged 68. Graduate of Fordham University School of Medicine, New York, 1921. Licensed in California in 1941. Doctor Dubois was a member of the Los Angeles County Medical Association.

✤

FROSTIG, JACOB P. Died in Los Angeles, October 21, 1959, aged 63, of a coronary. Graduate of the University of Vienna, Austria, 1921. Licensed in California in 1946. Doctor Frostig was a member of the Los Angeles County Medical Association.

✤

LANCE, VERNE LEE. Died in Fresno, April 24, 1960, aged 50. Graduate of Emory University School of Medicine, Emory University, Georgia, 1936. Licensed in California in 1949. Doctor Lance was a member of the Fresno County Medical Society.

✤

LANE, CLAYTON ROGERS. Died in Santa Monica, June 5, 1960, aged 72. Graduate of the University of Vermont College of Medicine, Burlington, 1914. Licensed in California in 1919. Doctor Lane was a member of the Los Angeles County Medical Association.

✤

ROBERTS, WILLIAM B. Died in an airplane crash near Nogales, Arizona, May 13, 1960, aged 53. Graduate of State University of New York College of Medicine at New York City, Brooklyn, New York, 1942. Licensed in California in 1945. Doctor Roberts was a member of the Alameda-Contra Costa Medical Association.

✤

SILVIS, RICHARD S. Died in Oakland, May 5, 1960, aged 53, of acute recurrent hepatitis and jaundice due to cirrhosis. Graduate of the University of Nebraska College of Medicine, Omaha, 1931. Licensed in California in 1948. Doctor Silvis was a member of the Alameda-Contra Costa Medical Association.

✤

SMITH, LEVI ALLEN (L. ALLEN). Died in Los Angeles, May 2, 1960, aged 38. Graduate of State University of New York College of Medicine at New York City, Brooklyn, N. Y., 1946. Licensed in California in 1952. Doctor Smith was a member of the Los Angeles County Medical Association.

✤

SMITH, PAUL NORTON. Died in Oxnard, May 7, 1960, aged 53, of heart disease. Graduate of Rush Medical College, Chicago, Illinois, 1936. Licensed in California in 1942. Doctor Smith was a member of the Ventura County Medical Society.

✤

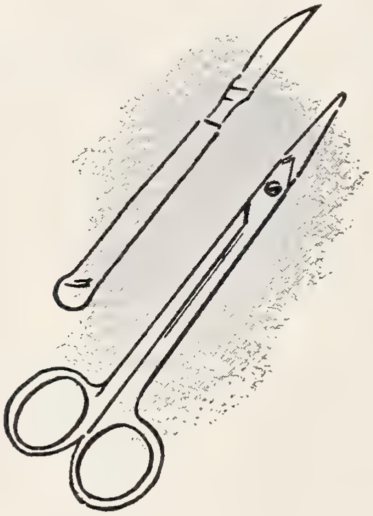
STOLL, EDWARD M. Died May 9, 1960, aged 46, of cancer. Graduate of University of Nebraska College of Medicine, Omaha, 1941. Licensed in California in 1946. Doctor Stoll was a member of the Los Angeles County Medical Association.

✤

TIMON, ALONZO NELSON. Died May 13, 1960, aged 64. Graduate of Vanderbilt University School of Medicine, Nashville, Tennessee, 1921. Licensed in California in 1925. Doctor Timon was a member of the Los Angeles County Medical Association.

✤

TOOMEY, FRANCIS ELMER. Died in San Diego, June 7, 1960, aged 60. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1926. Licensed in California in 1927. Doctor Toomey was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.



Annual Meeting

Ambassador Hotel
LOS ANGELES

April 30 to May 3, 1961

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted *to the appropriate section secretary* (see list on this page) no later than November 15, 1960.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 693 Sutter Street, San Francisco 2, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than November 15, 1960. (No exhibit shown in 1960, and no individual who had an exhibit at the 1960 session, will be eligible until 1962.)

Medical Motion Pictures

The daytime Film Symposiums which proved so popular during the 1959 and 1960 sessions will be continued in 1961. Evening film programs will be planned for doctors, their wives, nurses and ancillary personnel.

Authors desiring to show films should send their applications to Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Blvd., Los Angeles 5. All authors are urged to be present at the time of showing as there will be time allotted for discussion and questions from the audience after each film.

Deadline: November 1, 1960.

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY	Gardner S. Stout	39 North San Mateo Drive, San Mateo
ANESTHESIOLOGY	Gilbert E. Kinyon	5252 Chelsea Avenue, La Jolla
DERMATOLOGY AND SYPHILOLOGY	Paul M. Crossland	1120 Montgomery Drive, Santa Rosa
EAR, NOSE AND THROAT	Marvin W. Simmons	1020 East McKinley Avenue, Fresno
EYE	Floyd M. Bond	625 Broadway, San Diego 1
GENERAL PRACTICE	A. J. Franzi	3620 Army Street, San Francisco 10
GENERAL SURGERY	William P. Mikkelsen	1930 Wilshire Boulevard, Los Angeles 57
INDUSTRIAL MEDICINE AND SURGERY	John H. Leimbach, Jr.	525 Golden Gate Avenue, San Francisco 1
INTERNAL MEDICINE	Clifford B. Cherry	2400 Beverly Boulevard, Los Angeles 57
OBSTETRICS AND GYNECOLOGY	Edward F. Healey	711 D Street, San Rafael
ORTHOPEDICS	Bret W. Smart	2929 Summit Street, Oakland 9
PATHOLOGY AND BACTERIOLOGY	George J. Hummer	1328 22nd Street, Santa Monica
PEDIATRICS	Harry O. Ryan	194 North El Molino, Pasadena 4
PHYSICAL MEDICINE	S. Malvern Dorinson	450 Sutter Street, San Francisco 8
PSYCHIATRY AND NEUROLOGY	Robert E. Wyers Mark Zeifert	Psychiatry: Robert E. Wyers, Metropolitan Hospital, Norwalk Neurology: Mark Zeifert, 1065 S Street, Fresno 21
PUBLIC HEALTH	Ellis D. Sox	101 Grove Street, San Francisco 2
RADIOLOGY	John R. Bryan	450 Sutter Street, San Francisco 8
UROLOGY	Sam Peck	233 A Street, San Diego 1

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, M.D., M.P.H.
Director, State Department of Public Health

IN ORDER TO DOCUMENT more completely the adjustment of alcoholic patients following clinic treatment, the Division of Alcoholic Rehabilitation undertook a follow-up of a sample of patients who have been treated in each of the six rehabilitation clinics supported by the Division.

The study was completed at the end of June and a report on the findings will be available this fall. Purpose of the study is to learn more about the subsequent adjustment that alcoholics have been able to make following treatment within clinics.

The need for expanded community alcoholic rehabilitation clinics and services, the need for the increased use of general hospitals for treatment for the acutely ill alcoholic, and the development of greater interest in the medical and allied professions in the treatment of alcoholism, were emphasized in a recent meeting of the Division's Advisory Committee.

* * *

Dr. Hamlet C. Pulley has been named to the newly created position of assistant director of the State Department of Public Health. In addition to other responsibilities, Dr. Pulley will direct the activities of four of the department's divisions—Preventive Medical Services, Environmental Sanitation, Community Health Services, and Dental Health.

The directorship is the highest civil service position in the department, under the director and the deputy director, Dr. Harold M. Erickson.

The new assistant director joined the department in 1957 as a medical officer, and last year was named one of the department's three regional medical coordinators, serving the central part of the state. He was chief assistant health officer in the Los Angeles City Health Department for 14 years before joining this department.

Dr. Pulley graduated from the St. Louis University School of Medicine in 1937, and received his master's degree in public health in 1940 from Johns Hopkins School of Medicine. He is a diplomate of the American Board of Preventive Medicine and is a member of the Alameda-Contra Costa County Medical Society, the California Medical Association and the American Medical Association.

Dr. Lester Breslow, chief of the Bureau of Chronic Diseases since 1946, has been named as chief of the Division of Preventive Medical Services, a post which has been vacant since Dr. Robert Dyar was named chief of the department's new Division of Research.

Bureaus under his direction include Hospitals, Maternal and Child Health, Acute Communicable Diseases, Nutrition, Crippled Children Services, Occupational Health, Mental Health Services, and Chronic Diseases.

Dr. Breslow graduated from the University of Minnesota School of Medicine in 1938, and received his master's degree in public health from that university in 1941. Before his service with this department he was a district health officer for the Minnesota Department of Health and a preventive medicine officer in the U. S. Army. In 1952 he was director of study of the President's Commission on Health Needs of the Nation.

* * *

More than 7,700 dogs in Imperial County—about 97 per cent of the total—have been vaccinated against rabies since the start of the current disease outbreak last fall. In addition, 4,259 dogs have been destroyed in the stray dog control program.

* * *

Two local health projects totalling $41,600 for community research and demonstration have been approved by the State Health Department's Advisory Committee.

One is a $24,000 study by the Madera County Health Department on the use of nurse obstetric assistants in a rural county hospital maternity and newborn program.

This study proposes to demonstrate that in a rural area in California with limited medical care available, well-trained nurse obstetric assistants under medical supervision can provide prenatal supervision, labor and delivery care, and postpartal and newborn care for the mothers and newborn babies eligible for county hospital care. Through this means the project would seek to improve the quality of care available and result in a lowering of the maternal and perinatal morbidity and mortality.

A $17,600 study into institutional care of the aged and chronically ill was awarded the Los Angeles City Health Department. Purpose of the project is to gain added understanding of the problems facing the community so that care of the aged and ill persons may be improved through an educational program for management and staff of institutions.

Among eight projects for which approval was given for continuation was the Modoc County home nursing service, the only one of its kind in rural California; a home care research and demonstration project; demonstration of restorative services in nursing homes, and medical care of Old Age Security recipients in Santa Cruz County.

The enthusiastic participation of local health departments has already resulted in establishing new knowledge suitable for immediate application to local community health problems. Several demonstration projects have successfully pointed the way for providing necessary health services in the community, and following their demonstration, the budgetary support for these services has been assumed on a local level.

Interested persons may be placed on the mailing list to receive the *California Alcoholism Review and Treatment Digest* by writing to the Division of Alcoholic Rehabilitation, this department, 2151 Berkeley Way, Berkeley.

This bi-monthly publication of the department specializes in news of treatment, research, and educational activities in alcoholic rehabilitation, particularly in California.

* * *

Twelve children died in 1959 of suffocation directly connected with plastic film products. Ten of these deaths occurred in Los Angeles County. Five additional child deaths due to this cause are known to have occurred in 1958 and two in 1960. In addition, 28 suicides involving plastic film products are known to have occurred in California last year.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

A Message to the Doctors

RECENTLY A PHYSICIAN said to me, "What does your Auxiliary do besides meet once a month?"

If one physician should ask, there must also be others who are unaware of their Auxiliary's activities. Since the answer cannot be given quickly, and in small space, I shall try here to tell the story of the Auxiliary's work piecemeal through the year.

The medical profession is dedicated to providing the highest quality of medical and health care. As your Auxiliary, our job is to do exactly what our name implies—to help, to supplement. In addition we are active in community service. We carry out a program suggested by the American Medical Association and its state and county components.

During the 31 years of our existence we have proven to be an important ally. We have accepted equal responsibilities with our husbands in community service and have extended our activities to include those of the medical associations as times and events dictated.

We are active in legislation, working constantly with the California Medical Association. This is accomplished through our State Chairman of Legislation, who in turn contacts her individual county legislative chairmen, who then become active at the "grass roots" level. This of course cannot be accomplished unless we ourselves keep informed about the many problems confronting the medical profession and the solutions offered by the profession. Therefore, this committee works hand in hand with the legislative committees of the county societies, the California Medical Association and the American Medical Association, receiving its working information from the most authoritative sources.

We diligently work for the American Medical Education Foundation, realizing how extremely important it is to maintain medical schooling in the hands of the medical profession. In order to do the job well, the chairman studies the findings of the American Medical Education Foundation with regard to the needs of the medical schools so that the membership will be an informed one.

Nurse Recruitment, now called Para-Medical Careers, remains high on the list of our projects. With the continued shortage of nurses, we must continue to concentrate on recruitment. The majority of our counties have either Nurse Scholarship funds or Student Loan funds or both. Thousands of dollars are raised by our 34 county Auxiliaries to be used for scholarships or loans for girls and boys interested in nursing and the allied fields of medicine. Future Nurse Clubs are mushrooming throughout the state. At last report there were some 250 Future Nurse Clubs in California.

The Woman's Auxiliary is very active in behalf of Physicians' Benevolence. This is a service to our *own*—and what more need be said!

I have touched lightly on just a few of our important committees pertaining to health, and during the year I will elaborate on them in future articles.

To be active in committees of the kind here mentioned is one form of community service. There is another—the giving of volunteer service within each community. You will find physicians' wives active in almost every health organization. The public recognize them as an "informed source." As such they can serve both the community and the medical profession. You will find our Auxiliary members giving thousands of hours in volunteer work to the Cancer Society, Tuberculosis Association, Heart Association, Crippled Children's Society, hospital guilds and many another such organizations. We do this not only because we believe in individual responsibility and in group responsibility but because we wish to help medicine to remain a free enterprise.

Nearly all our members belong to other clubs and organizations in their communities and keep on the alert to correct any misinformation or misunderstanding regarding the medical profession. Most of our county auxiliaries have "Guest Day," to which representatives of other clubs in their communities are invited. At these meetings the auxiliaries usually have a speaker who talks on some phase of medicine. This proves helpful to many leaders among the diversified groups and also helps to establish friendly relationships with them, which is good public relations.

What we do "besides meet once a month" is helpful enough to the medical profession to warrant you to encourage all nonmember wives to participate in the Auxiliary and its activities. We need *your* assistance in order to give *our* maximum service to *your* community needs.

MRS. SAMUEL GENDEL
President, Woman's Auxiliary to the California Medical Association

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

The Robert T. Legge Memorial Fund has been established at the East Bay Rehabilitation Center in recognition of the many outstanding contributions to the field of industrial medicine made by Dr. Legge, who last March died of a heart attack while attending Charter Day ceremonies of the University of California, Berkeley.

Deeply interested in industrial medicine, Dr. Legge was one of the founders of the Western Industrial Medical Association, which in 1959 honored him through a contribution to the East Bay Rehabilitation Center.

In 1951 the highest honor in industrial medicine—the William S. Knudsen Award—was bestowed upon him.

In creating the Memorial Fund, Mr. Thomas McLaren, chairman of the board of the Rehabilitation Center, said, "Dr. Legge's foresight in championing occupational medicine in this area has been emphasized by the increasing importance given this phase of medicine by industry, schools, professions and public health groups."

* * *

Dr. John R. Schafer, Jr., an intern at Highland-Alameda County Hospital in Oakland, recently was awarded one of the 20 annual Mead Johnson Awards for Graduate Training in General Practice. The award consists of $1,000 to be used to help defray the expenses of a year's training in a general practice residency. The scholarship award program was established in 1952 by the American Academy of General Practice. Dr. Claude G. Furbush, president of the Alameda-Contra Costa Chapter of the Academy of General Practice, presented the certificate of award. Funds for the Academy's Graduate training awards program are provided by Mead Johnson & Company.

LOS ANGELES

Dr. Franklin D. Murphy, formerly Chancellor of the University of Kansas and for a time the dean of the medical School there, has assumed his duties as chancellor of the University of California, Los Angeles. He will be officially inaugurated September 23 to succeed Vern O. Knudsen, who has reached the academic retirement age.

SAN FRANCISCO

The thirteenth annual meeting of the **American Association of Blood Banks** will be held in San Francisco, August 21 through 26. The program will cover scientific, administrative and technical aspects of blood banking. A half-day session on the preservation of erythrocytes is expected to be particularly outstanding. Three guests from London, P. L. Mollison, M.D., A. E. Mourant, M.D., and Ruth Sanger, Ph.D., will participate.

GENERAL

The Commission on Cancer of the California Medical Association has revised the **Minimum Standards for Consultative Tumor Boards** in California. Requests for copies of the Standards or information should be directed to the Medical Director, Commission on Cancer, 693 Sutter Street, San Francisco 2, California. The commission called attention particularly to an item in the new Standards providing for the designation of a member of the Section on General Practice as a consultant member to the Tumor Board for the purpose of increasing the liaison between the Board and General Practice Section.

* * *

Twenty-three drugs and six combinations of drugs, primarily for the relief of suffering, have been added to the list of those that the California Department of Social Welfare Medical Care trust fund will pay for when prescribed for persons eligible under the **old age security and needy blind program.**

Most of the drugs will be paid for regardless of the condition for which they are given, but a few are on a restricted list to be paid for only when prescribed in certain specified disease states:

The lists* of restricted and unrestricted drugs, effective July 1, 1960, follow:

Part I—Unrestricted by Diagnosis

A. Single Drugs:

Acetazoleamide (Diamox)
Aminophylline (All USP forms)
Aminopterin sodium
Atropine sulfate USP

Belladonna tincture USP
Bishydroxycoumarin USP (Dicumarol)
Busulfan (Myleran)

Camphorated opium tincture USP (Paregoric)
Carbachol (Carcholin)
Chiniofon
Chlorambucil (Leukeran)
Chlormerodrin (Neohydrin)
Chlorothiazide (Diuril)
Chlorpropamide (Diabinese)
Chlortetracycline USP (any salt form allowed) (Aureomycin) (limit No. 16 caps. or tabs; per Rx)
Codeine phosphate or sulfate USP
Colchicine USP

Demethylchlortetracycline (any salt form allowed) (Declomycin) (limit No. 16 caps. or tabs; per Rx)
Desoxycorticosterone acetate injection USP
Digilanid
Digitalis USP
Digitoxin USP
Digoxin USP (Lanoxin)
Dihydrotachysterol (Hytakerol)
Diphenylhydantoin sodium USP (Dilantin Sodium)

Emetine hydrochloride USP
Ephedrine sulfate USP
Epinephrine USP
Erythromycin USP (any salt form allowed) (Erythrocin, Ilosone, Llotycin) (limit No. 16 caps. or tabs; per Rx)

Ferrous sulfate USP

Gitalin (Gitaligin)
Glyceryl trinitrate USP (nitroglycerin)

Hydralazine hydrochloride (Apresoline Hydrochloride)
Hydrochlorothiazide (Esidrix, Hydrodiuril, Oretic)

Insulin (all forms)
Isoflurophate (Floropryl)
Isoproterenol hydrochloride USP (Aludrine, Isuprel)

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*Reprints of this list, printed on a single page for easy reference, are available without charge from CALIFORNIA MEDICINE, 693 Sutter Street, San Francisco 2.

Mecamylamine (Inversine)
Mechlorethamine hydrochloride NF (Mustargen Hydrochloride)
Meperidine hydrochloride USP (Demerol Hydrochloride)
Meralluride injection USP (Mercuhydrin Sodium)
Mercaptopurine (Purinethol)

Neostigmine bromide USP

Oxygen USP
Oxytetracycline USP (any salt form allowed) (Terramycin) (limit No. 16 caps. or tabs; per Rx)

Penicillin-G USP (oral) (limit No. 20 caps. or tabs; per Rx)
Penicillin-V (oral) (any salt form allowed) (limit No. 20 caps. or tabs; per Rx)
Pentobarbital sodium USP
Phenobarbital USP
Physostigmine salicylate USP
Pilocarpine (Hydrochloride, Nitrate) USP
Posterior pituitary USP
Primaquine phosphate USP
Probenecid (Benemid)
Procainamide hydrochloride USP (Pronestyl Hydrochloride)
Procaine penicillin G suspension USP (injection)

Quinidine sulfate USP

Reserpine USP (not payable if prescribed by any brand name)

Sodium radio-chromate USP
Sodium radio-iodide USP
Sodium radio-phosphate USP
Streptomycin USP
Sulfisoxazole USP (Gantrisin)

Tetanus antitoxin USP
Tetanus toxoid USP
Tetracycline USP (oral) (any salt form allowed) (limit No. 16 caps. or tabs; per Rx)
Thyroid USP
Tolbutamide (Orinase)
Triethylenethiophosphoramide (ThioTEPA)
Trihexyphenidyl hydrochloride (Artane)
Trisulfapyrimidines USP (triple sulfas)

B. PERMITTED COMBINATIONS:

Aminophylline and phenobarbital
Aminophylline, ephedrine and pentobarbital
Aminophylline, ephedrine and phenobarbital

Codeine and aspirin
Codeine, aspirin, phenacetin and caffeine

Ephedrine and pentobarbital
Ephedrine and phenobarbital

The inclusion of a drug in a combination does not permit its prescription as a single drug for payment from the Medical Care Fund, unless it is otherwise listed in Group A.

Combinations of drugs in a prescription other than those listed in Part I, B, are not payable from the Medical Care Fund.

The presence of therapeutically inert pharmaceutical adjuncts (e.g., binders, fillers, vehicles, buffers, diluents, preservatives and excipients) does not constitute a combination.

Part II[†]—Restricted by Specific Diagnosis

1. Addison's disease, disseminated lupus erythematosus, pemphigus, nephrosis, hemolytic anemias and thrombocytopenia
   Cortisone USP
   Prednisolone
   Prednisone
2. Cancer (including lymphomas and leukemias)
   Cortisone USP
   Diethylstilbestrol USP
   Methyltestosterone USP
   Prednisolone
   Prednisone
   Testosterone USP (all forms)
3. Malaria
   Chloroquine phosphate USP
4. Pernicious anemia and/or combined sclerosis
   Cyanocobalamin USP (B_{12}) intramuscular injectable only
   Liver extract USP intramuscular injectable only
5. Urinary tract infections resistant to sulfonamide therapy or in the case of a patient sensitive to sulfonamides
   Nitrofurantoin (Furadantin)

[†] When the drugs listed in this section are prescribed for the specific diagnosis shown, the practitioner shall indicate this by writing "Code 1" on the prescription Form (MC-165). If this is not on the form the recipient is responsible for payment.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to: Mrs. Margaret H. Griffith, Director, Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

General Pediatrics. Sunday through Wednesday, July 17 through 20. Lake Arrowhead, University of California Residential Conference Center. Sixteen hours. Fee: $137.50 (including room and meals).

Advance Seminar in Internal Medicine. Wednesday through Sunday, July 20 through 24. University of California Residential Conference Center, Lake Arrowhead. Eighteen hours. Fee: $150.00 (including room and meals).

Dermatologic Therapy. Monday and Tuesday, July 25 and 26. Twelve hours. Fee: $40.00.

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 27 through 31. University of California Residential Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (including room and meals).

Special Problems in Anesthesia. Wednesday, Thursday and Friday, August 3, 4 and 5. Eighteen hours. Fee: $60.00.

Arthritis and Rheumatism. Wednesday and Thursday, August 17 and 18. Twelve hours. Fee: $15.00 (includes lunch).

Obstetrical Procedures and Complications. Friday and Saturday, August 26 and 27. Fourteen hours. Fee: $50.00 (includes two luncheons).

Fetal Electrocardiography. Sunday, August 28. Seven hours. Fee: $20.00.

Below-Knee Prosthetics. Monday through Friday, September 19 through 23. Enrollment limited to 20. Fee: $125.00.

Below-Knee Prosthetics. Monday through Friday, October 31 through November 4. Enrollment limited to 20. Fee: $125.00.

For Ancillary Personnel

Cardiac Workshop: Nursing Care of the Cardiac Patient Who Undergoes Surgical Intervention. Monday through Friday, July 25 through August 12. Seventy-five hours. Fee: $90.00.

Dietary Cost Control with Emphasis on Records and Accounting Techniques. Tuesday, September 6 through January 31. Forty-five hours. Fee: $35.00.

Beginning Medical Terminology. Tuesdays, September 13 through January 17. Forty-five hours. Fee: $35.00.

Advanced Medical Terminology. Wednesdays, September 14 through January 18. Forty-five hours. Fee: $35.00.

Advanced Seminars in Biological Sciences: Immunochemistry. Wednesdays, September 14 through October 19. Twelve hours: Fee: $35.00.

Development and Principles of Industrial Nursing. Mondays, September 19 through January 30. Forty-five hours. Fee: $35.00.

Industrial Health. Tuesdays, September 20 through December 6. Thirty hours. Fee: $25.00.

Mortuary Science. Tuesdays, September 20 through December 6. Twenty-four hours. Fee: $35.00.

Counseling the Handicapped Child and His Parents. Wednesdays, September 21 through December 7. Twenty-four hours. Fee: $35.00.

Elementary Human Anatomy and Physiology. Thursdays, September 22 through February 9. Forty-five hours. Fee: $40.00.

Photography in Medical Practice and Research. Thursdays, September 22 through December 15. Twenty-four hours. Fee: $35.00.

Two-Week Rehabilitation Nursing Workshop. Monday through Friday, October 17 through 28. Eighty hours. Fee: $30.00.

Methods in Toxicology. Wednesdays, October 26 through December 21. Sixteen hours. Fee: $30.00.

Contact: Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Obstetrics and Gynecology. Thursday to Saturday, September 15 to 17. Twenty-one hours. Fee: $50.00.

Radiological Physics (32 Tuesday evenings). September 20 through April 24. For residents. Fee: $100.00.

Advances in Surgical Anatomy, Normal Anatomy and Histology of the Eye. Thursday through Saturday, September 22 through 24. Twenty-one hours.*

Internal Medicine. Wednesday through Sunday, September 28 through October 2. Thirty-five hours.*

Surgery, Franklin Hospital. Saturday and Sunday, October 8 and 9. Fourteen hours.*

Dermatology. Friday and Saturday. October 14 and 15. Fourteen hours.*

Advances in Ophthalmic and General Pathology. Thursday through Saturday, November 3 through 5. Twenty-one hours.*

Symposium on Ear-Nose-Throat Problems in Children, Children's Hospital. Saturday, November 5. Seven hours. Fee: $12.50.

Psychologic Problems of Medical Practice. Friday through Sunday, November 11 through 13. Twenty-one hours.*

A Course in Ophthalmology. Thursday through Saturday, December 1 through 3. Twenty-one hours. Fee: $12.50.

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Symposium on Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Monday, March 15 through 20. Forty-eight hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For Ancillary Personnel

Cancer Nursing. Wednesday through Friday, August 10 through 12.*

Nursing and People. Monday through Friday, August 15 through 26. Fee: $30.00.

Continuing Education Conference Series. Tuesday through Friday, September 6 through 16.*

Administration of Nursing Care. Tuesdays, September 13 through December 13. Fee: $45.00.

Nutritional Aspects of Nursing Care. September 21 through November 9.*

Evening Lectures in Nutrition. Mondays, October 10 through November 14.*

Evening Lectures in Laboratory Technology. Tuesdays, October 18 through November 22.*

Contact: Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO
(Formerly San Francisco-Stanford Hospital)

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Monday and Wednesday, 7 to 8:30 p.m.

Postgraduate Conference, Retinal Detachment. Wednesday, Thursday and Friday, September 14, 15, 16.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

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*Fees to be announced.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Cardiac Resuscitation. Sponsored by the Los Angeles County Heart Association each Wednesday throughout the year, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Residents and interns of Los Angeles County, and all armed forces medical personnel admitted without fee. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Hawaii Course: The USC School of Medicine will offer the Third Postgraduate Refresher Course to be held in Honolulu and on board the S.S. *Lurline* from August 4 to August 20, 1960. (As a time and money saver, round trip air travel is also possible August 4 to August 14.)

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

CLINICAL TRAINEESHIPS available in all clinical departments by arrangement with the Postgraduate Division and the chairman of the department or departments involved. Eighty hours minimum. Fee: As arranged.

Diseases of the Chest: Two and four-week Traineeships in cooperation with the Los Angeles County Hospital. Dates as arranged.

Anesthesia. Monday through Friday. Dates as arranged. Six months. Fee: $350.

JOINT MANIPULATION. Monday through Friday, 8:00 to 12:00, dates to be arranged. Twenty hours. Fee: $75.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

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Audio-Digest Foundation, a nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

AUGUST MEETINGS

Gerontological Society, Inc., Mark Hopkins Hotel, San Francisco. August 7 through 12. *Contact:* Mrs. Marjorie Adler, administrative secretary, 660 S. Kingshighway Blvd., St. Louis 10.

Reno Surgical Society 10th Annual Conference. August 18, 19 and 20. The Mapes Hotel, Reno. *Contact:* Harry B. Gilbert, M.D., 275 Hill Street, Reno, Nevada.

American Association of Blood Banks, Jack Tar Hotel, San Francisco. August 21 through 26. *Contact:* John B. Alsever, M.D., secretary, 1211 W. Washington St., Phoenix, Arizona.

American Physiological Society. August 22 through 26. Stanford University, 300 Pasteur Drive, Palo Alto. *Contact:* Mr. Ray G. Daggs, executive secretary, 9650 Wisconsin Ave., Washington 14, D. C.

American Hospital Association, Civic Auditorium, San Francisco. August 27 through September 1. *Contact:* Mr. Maurice J. Norby, assistant director, 18 E. Division St., Chicago.

SEPTEMBER MEETINGS

Pacific Dermatologic Association Inc. 12th Annual Meeting. Empress Hotel, Victoria, British Columbia. September 2 through 4. *Contact:* Edward Ringrose, M.D., secretary, 2636 Telegraph Ave., Berkeley.

Oregon State Medical Society, Portland. September 7 through 9. *Contact:* Mr. Roscoe K. Miller, executive secretary, 1115 S. W. Taylor St., Portland 5, Oregon.

Nevada State Medical Association Annual Meeting. September 7 through 10. Stardust Hotel, Las Vegas. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 2790, Reno, Nevada.

Postgraduate Assembly of Saint John's Hospital. September 8 through 10. 9 a.m. to 4 p.m., St. John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

Santa Barbara County Heart Association Physicians Symposium. September 17, 9:00 a.m. to 5:00 p.m., Biltmore Hotel, Santa Barbara. *Contact:* E. J. Hannon, executive director, 18 La Arcada Court, Santa Barbara.

California Society of Internal Medicine Annual Meeting, Yosemite. September 23, 24 and 25. *Contact:* Barbara E. Oulton, executive secretary, 350 Post St., San Francisco 8.

Washington State Medical Association Annual Convention. September 25 through 28. Olympic Hotel, Seattle, Washington. *Contact:* R. W. Neill, executive secretary, 1309 7th Avenue, Seattle, Washington.

Southern California Society of Gastroenterology Panel Discussion "Ulcerative Colitis." September 27. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

Pan-Pacific Surgical Association 8th Intensive Surgical Congress, embracing all Surgical Specialties. September 27 through October 5. Honolulu, Hawaii. *Contact:* F. J. Pinkerton, M.D., director general, Suite 230, Alexander Young Building, Honolulu 13.

OCTOBER MEETINGS

AMERICAN SOCIETY OF PLASTIC AND RECONSTRUCTIVE SURGERY. Statler Hotel, Los Angeles, October 2 through 7. *Contact:* Thomas R. Broadbent, M.D., secretary, 508 E. S. Temple, Salt Lake City.

SAN DIEGO COUNTY HEART ASSOCIATION 10th Annual Symposium on Heart Disease. October 3 and 4. El Cortez Hotel. *Contact:* O. Martin Avison, 3545 Fourth Avenue, San Diego 3.

AMERICAN ASSOCIATION FOR THE SURGERY OF TRAUMA. Coronado Hotel, San Diego. October 5 through 7. *Contact:* William T. Fitts, Jr., M.D., secretary, 3400 Spruce St., Philadelphia 4.

LOS ANGELES COUNTY HEART ASSOCIATION 30th Annual Professional Symposium on Cardiovascular Diseases. October 5 and 6. Beverly Hilton Hotel, Beverly Hills. *Contact:* Los Angeles County Heart Association, 2405 W. 8th St., Los Angeles 57.

SAN FRANCISCO HEART ASSOCIATION 30th Annual Postgraduate Symposium on Heart Disease. October 5 through 7. St. Francis Hotel, San Francisco. *Contact:* Mr. Lawrence I. Kramer, Jr., executive director, 259 Geary St., San Francisco 2.

WESTERN INDUSTRIAL MEDICAL ASSOCIATION combined Meeting with 4th Western Industrial Health Conference. October 7 through 9. Jack Tar Hotel, San Francisco. *Contact:* Verne G. Ghormley, M.D., president, 3032 Tulare Street, Fresno 21.

AMERICAN COLLEGE OF SURGEONS, 46th Annual Clinical Congress, San Francisco. October 10 to 14. *Contact:* William E. Adams, M.D., secretary, 40 E. Erie St., Chicago 11.

AMERICAN CANCER SOCIETY CALIFORNIA DIVISION Annual Meeting. October 13 through 15. Villa Hotel, San Mateo. *Contact:* Jane N. Lounsbury, assistant director, Field Services, 467 O'Farrell, San Francisco.

KAISER FOUNDATION HOSPITALS IN NORTHERN CALIFORNIA Fourth Annual Symposium on Human Genetics. October 14 and 15. Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., Director of Medical Education, 280 West MacArthur Blvd., Oakland.

CALIFORNIA ACADEMY OF GENERAL PRACTICE 12th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

WESTERN ORTHOPEDIC ASSOCIATION Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. *Contact:* Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

ASSOCIATION OF STATE AND TERRITORIAL HEALTH OFFICERS. Jack Tar Hotel, San Francisco. October 26 through 28. *Contact:* A. C. Offutt, M.D., secretary-treasurer, 1330 W. Michigan Street, Indianapolis 7.

ST. JUDE HOSPITAL—FULLERTON 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. *Contact:* B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

AMERICAN SCHOOL HEALTH ASSOCIATION, San Francisco. October 30 through November 4. *Contact:* A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

AMERICAN PUBLIC HEALTH ASSOCIATION, San Francisco. October 31 through November 4. *Contact:* Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

NOVEMBER MEETINGS

SAN DIEGO COUNTY GENERAL HOSPITAL 14th Annual Postgraduate Assembly. Wednesday and Thursday, November 2 and 3. San Diego County General Hospital, North End of Front Street, San Diego. *Contact:* Frank H. Carter, M.D., chairman, 2001 Fourth Avenue, San Diego 1.

AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE. Biltmore Hotel, Los Angeles. November 2 through 5. *Contact:* Rolla B. Hill, M.D., executive secretary, 3575 St. Gaudens Rd., Miami 33, Florida.

CALIFORNIA SANATORIUM ASSOCIATION Annual Business, Clinical and Administrative Session. November 12. Olive View Hospital, Olive View, Calif. *Contact:* J. P. Myles Black, M.D., Olive View Hospital, Olive View, Calif.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Fall Meeting, November 15 and 16. State Department of Public Health, 2151 Berkeley Way, Berkeley 4. *Contact:* State Department of Public Health, Berkeley.

AMERICAN COLLEGE OF PHYSICIANS Annual Basic Science Lecture—Professor Melvin Calvin—"Origin of Life." November 18, 6:30 p.m., California Club, Los Angeles. *Contact:* George C. Griffith, M.D., Governor, A.C.P., 1136 W. 6th St., Los Angeles 17.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

1961 MEETINGS

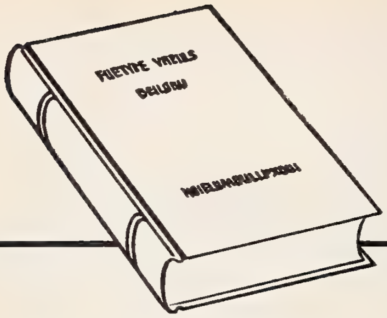
AMERICAN COLLEGE OF PHYSICIANS 8th Annual Meeting of Southern California Region. February 5, 6 and 7. Biltmore Hotel, Santa Barbara. *Contact:* George C. Griffith, M.D., Governor, A.C.P., 1136 W. 6th St., Los Angeles 17.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

SOUTHWESTERN PEDIATRIC SOCIETY Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

COLLEGE OF MEDICAL EVANGELISTS Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.



THE PHYSICIAN'S *Bookshelf*

THE HUMAN SPINE IN HEALTH AND DISEASE—Anatomicopathologic Studies—George Schmorl, M.D., Clinicoradiologic Aspects—Herbert Junghanns, M.D. The First American Edition, Translated and Edited by Stefan P. Wilk, M. D. and Lowell S. Goin, M.D. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y. 1959. 285 pages, $21.00.

This beautifully illustrated monograph, long a classic on the Continent and often quoted in this country, has been made available in an English translation. First published in Germany in 1932, the work summarizes Professor Schmorl's investigation into the anatomic, pathologic, and radiologic aspects of 10,000 spines studied at the Dresden Institute of Pathology between 1925 and 1932.

Professor Schmorl's work, originally undertaken to unravel the mysteries of scoliosis, has helped form the groundwork of much of our understanding of intervertebral disc disease, and was intended by the author to be the first detailed and systematic study of spine disease. An associate at the Institute, Dr. Junghanns, is credited with presentation of the radiologic aspects of the study and has been responsible for the text revisions following Professor Schmorl's death.

This edition presents by means of diagrams, clinical radiographs, and photographs of dissected specimens a description and classification of spine disease affecting bones, joints and intervertebral discs. The material is organized into nine chapters, covering anatomy, embryology, congenital anomalies, metabolic bone disease, degenerative arthritis, degenerative and traumatic intervertebral disc disease, spondylolisthesis and infection, as well as the deformities of kyphosis, scoliosis and lordosis. The bibliography is extensive, and presented in the European manner of giving credit to the author but not to the publication quoted, which will make the checking of references more time-consuming.

Many of the ideas, which may have seemed new in 1932, have become so integral a part of our thinking now that little in the text will appear new or startling. The concept of the life cycle of degenerative changes in the intervertebral disc leading to prolapse is thoroughly explored, and the infrequency of single trauma as a cause of herniation is stressed. The author's insistence that we be thoroughly alert to the dangers of overlooking multiple injuries to the spine conforms with our recognition of the spine as a functional unit in trauma and of the possibility that a fracture of one segment may be accompanied by other fractures or disc injuries far removed from the primary injury. Schmorl was fully aware of the medical-legal implications in spine diseases and his comments on this subject will be of interest to both medical and lay persons interested in this phase of orthopedics.

The book itself presents an attractive format and is easily read, but it is the remarkable clarity of the photographs of the carefully dissected specimens and of the radiographs that give the book its value. The illustrations in the chapters on embryology, congenital anomalies, degenerative arthritis and intervertebral disc disease are especially to be commended.

Where the volume is concerned primarily with the description of anatomic and pathologic change, the written text is clear and still valid, but often where digression is made into theories of etiology some of the explanations will seem incomplete and out-of-date, especially in those chapters dealing with metabolic bone disease, kyphosis, scoliosis, lordosis and infection.

For example, when trying to explain breakthrough of disc tissue into vertebral bodies, Schmorl states, "We believe that the presence of nuclear fluid has an osteoclastic action. . . ." Still later, in discussing the cause of scoliosis he states, "Pathologic alteration of the vertebral body (e.g. lateral wedging with rotation) is among the causes of scoliosis." Both of these statements may be viewed by many modern readers with skepticism.

On the other hand, those sections of the book devoted to the pathology of intervertebral disc disease, congenital anomalies and degenerative arthritis, present a thoughtful and complete baseline study of the natural history of these diseases.

The book, because of the illustrations it contains and because of its classic description of degenerative disc disease, is highly recommended as a reference text to medical students, resident physicians in training, and to orthopedists interested in reviewing both intervertebral disc disease and spine embryology.

EDWARD H. WILSON, M.D.

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DIAGNOSIS AND TREATMENT OF TUMORS OF THE CHEST—Sponsored by the American College of Chest Physicians. Edited by David M. Spain, M.D. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 371 pages, $14.75.

This book deals in a comprehensive fashion with all of the common tumors of the chest and briefly discusses most of the rare lesions therein. In addition to emphasizing proven methods of therapy (surgery and radiation), most of the recent refinements in diagnostic technique are included.

As might be expected with so great a number of contributing authors, there is some disagreement regarding pathological entities (e.g., pulmonary adenomatosis vs. bronchiolar carcinoma) and modalities of therapy (e.g., surgery vs. radiation in upper and middle third esophageal carcinoma).

The illustrations are good (particularly the demonstrations of intracardiac tumors by angiocardiography) and the text easily readable. Radiation therapy is adequately discussed, though undue emphasis is placed on the ephemeral value of supervoltage radiations. References are excellent. The book is recommended to physicians interested in diseases of the chest.

JOHN H. HEALD, M.D.

ANTITHROMBOTIC THERAPY—Paul W. Boyles, M.D., Instructor in Medicine, University of Miami School of Medicine, Jackson Memorial Hospital, Miami, Florida; and Director, Coagulation Research Laboratory, Miami Heart Institute, Miami Beach, Florida. (Modern Medical Monographs, 20—Editor in Chief: Irving S. Wright, M.D.; Consulting Editor: Richard H. Orr, M.D.). Grune & Stratton, 381 Fourth Avenue, New York 16, N. Y., 1959. 131 pages, $5.00.

This concise monograph contains a tremendous amount of information which is not apparent from the title. There are chapters on "The Mechanism of Blood Coagulation," "Clotting Tests," and the "Technic of Blood Coagulation" as well as chapters on the "Clinical Use of Antithrombotic Agents," and "Long Term Anticoagulant Therapy." In fact, the area encompassed may be too broad, which may be partly responsible for some errors, particularly in the sections on the coagulation mechanism. There are a few comments regarding that mechanism which are no longer tenable in view of recent experimental evidence. An example of this is the statement that SPCA is necessary for the activation of intrinsic thromboplastin.

The sections dealing with coagulation studies are good but unfortunately do not apply specifically to the control of anticoagulant therapy. No mention is made of the "thrombotest" recently (Owren, P.A.: Thrombotest: A New Method for Controlling Anticoagulant Therapy, Lancet, 2:754, 1959) introduced which has shown great promise and may become the test of choice in following patients receiving anticoagulants.

The chapters on anticoagulant therapy are adequate in that they briefly discuss the problems encountered in the anticoagulant management of myocardial infarction (both short and long term treatment), thrombophlebitis, embolism, and cerebral vascular disease. There is unfortunately no mention made of Polybrene,® the new anti-heparin agent.

Almost one third of the monograph is devoted to fibrinolytic therapy and a discussion of the various agents used. This is an unfortunate and excessive emphasis on an aspect of antithrombotic therapy in which there is as yet no satisfactory drug. Those in use are either ineffective, or dangerous, or both.

Finally, the bibliography is extensive but in the few instances in which it was checked, fails to document some of the statements made in the text.

This little book is of value in that it brings together in one volume most of the information necessary for the application of anticoagulant therapy.

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OPEN REDUCTION OF COMMON FRACTURES—Oscar P. Hampton, Jr., M.D., F.A.C.S., Assistant Professor, Clinical Orthopedic Surgery, Washington University School of Medicine, St. Louis; and William T. Fitts, Jr., M.D., F.A.C.S., Professor of Surgery, Schools of Medicine, University of Pennsylvania, Philadelphia; Chief, Surgical Division II, Hospital of the University of Pennsylvania. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1959. 212 pages, $8.75.

This 212 page comprehensive review on the Open Reduction of Common Fractures will prove of great value to surgeons interested in the operative care and repair of broken bones. However, I sincerely doubt that it will be of any help to the practitioner who treats occasional fractures. Very little attention is paid to the minute details which must be observed in carrying out a specific operative procedure. Thus, some previous experience in clinical orthopedics or traumatology at a teaching center is necessary in order to interpret and differentiate the approaches and selection of material. The authors show no prejudice against any one procedure and no preference toward any other. They present a good selection of operative approaches to fractures that are best treated by open reduction. For this reason it makes excellent reading for the surgeon skilled in these various procedures. In addition, at the end of each section is presented a subdivision on "pitfalls and precautions" which is of great value to anyone interested in fracture treatment. These represent pragmatic suggestions on how to avoid trouble for both the patient and the surgeon. Finally it should be noted that the author's style is one of frugality with words. A tremendous amount of literary material has been condensed between the covers of this modern surgical monograph and as such it makes for very easy reading while the point in question is being clarified.

John F. Cowan, M.D.

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BIOPSY MANUAL—James D. Hardy, M.D., Professor and Chairman of the Department of Surgery, University of Mississippi School of Medicine; James C. Griffin, Jr., M.D., Assistant Instructor in Surgery, Administrative Chief Resident in Surgery, National Cancer Institute Trainee, University of Mississippi School of Medicine, and Jorge A. Rodriguez, M.D., Assistant Professor of Surgical Anatomy, The Dept. of Surgery, University of Mississippi School of Medicine. W. B. Saunders Company, Philadelphia, 1959. 150 pages, $6.50.

This is a very simple book which tells one how to do simple surgical techniques that are commonly employed by interns and residents for the establishment of surgical diagnoses. Biopsies of all areas of the body are discussed and illustrated, ranging from punch biopsies of the skin to needle biopsies of the liver to renal biopsies to excisions of nodules in the lung.

It is nice to have this material gathered together in one place. One could essentially learn all one needs from the book by browsing through it once and looking at the illustrations. I think it is the type of a book that should be available in the hospital library, but one that one wouldn't care to own particularly for his own library collection. It is far too simple and Dr. Hardy has essentially included this material in other books which he has written which are far more valuable for an individual to own.

This simple book, then, is recommended for staff libraries, but not for individual ownership.

Victor Richards, M.D.

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ACUTE PERICARDITIS—David H. Spodick, M.D., Senior Physician and Chief, Cardiographic Laboratory of the Medical Services, Lemuel Shattuck Hospital; Clinical Survey Director, Department of Cardiology, The Boston Evening Clinic; Associate Fellow of the American College of Cardiology; Clinical Instructor in Medicine, Tufts University School of Medicine. Grune & Stratton, New York, 1959. 182 pages, $6.50.

This book is an excellent clinical account of all varieties of pericarditis and their treatment. The compilation of material for this subject is of considerable value, because it is a subject which has been relatively neglected in cardiac literature. Spodick's coverage is primarily for the clinician and he discusses common and uncommon varieties of pericarditis, their clinical diagnosis and treatment. There is very little on modern hemodynamic or angiocardiographic studies, nor is the subject of the possible role of pericarditis and myocarditis as a precursor of idiopathic hypertrophy discussed in any detail. With these reservations, the book can be highly recommended as an excellent appraisal of the problem which will be of primary value to the practicing physician.

Maurice Sokolow, M.D.

CIGARETTE HABIT, THE: A Scientific Cure—Arthur King. Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1959. 96 pages, $2.00.

The author of this small monograph divides smokers into four general groups:

1. The light smoker. One who smokes up to 15 cigarettes a day, or smokes a pipe or tobacco. He states he is "fully convinced that smoking is probably good for these people, in terms of pleasure, relaxation and sociability."

2. The medium smoker. One who averages about a pack a day around the calendar.

3. The heavy smoker. One who smokes from 20 to 30 cigarettes a day, who often shows marked irritability when he discontinues smoking, and who is only a short step from the next classification!

4. The cigarette addict. This man smokes as much or more than the heavy smoker, but smokes in a different fashion, inhaling deeply or compulsively and apparently getting some extra pleasure out of the habit.

He estimates that about 5 per cent of smokers fall in the first class, 45 in the second, 40 in the third and perhaps 10 in the last. He then outlines a program of discontinuance, aimed chiefly at the addict. This amounts to a series of more or less elaborate steps, many of them timed to a calendar, and most amounting to self-hypnosis. Given the proper type of character to start with, this reviewer sees no reason why the steps should not be successful. They involve the securing of some caffeine tablets, some antihistamine capsules, some throat lozenges, some dextro-amphetamine sulfate tablets and for the real addict some phenobarbital pills. There is an hourly time schedule for the 21 days of "decompression."

The author discusses the hypothesis that cigarettes are a causal factor in lung cancer. Since so many heavy smokers do *not* get lung cancer he believes that there is some other important factor involved, apparently constitutional. That he is prejudiced on behalf of the weed is indicated by the final quote from James Russell Lowell:

> *"A lone man's companion, a bachelor's friend, a hungry man's food, a sad man's cordial, a wakeful man's sleep, and a chilly man's fire . . . there's no herb like unto it under the canopy of heaven."*

L. Henry Garland, M.B.

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CLINICAL OBSTETRICS AND GYNECOLOGY—Vol. 2 No. 4—A Quarterly Book Series—Symposium on Cesarean Section edited by Edwin J. De Costa, M.D., and Symposium on Advances in Gynecologic Surgery edited by S. B. Gusberg, M.D. Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1959. 1228 pages. $18.00 a year for four consecutive numbers issued quarterly (subscription only).

This is the December 1959 issue of the quarterly Clinical Obstetrics and Gynecology. Its subjects are cesarean section, ably edited by Edwin J. De Costa, and advances in gynecologic surgery, edited by S. B. Gusberg in an equally satisfactory manner.

De Costa himself writes of indications for cesarean section. He emphasizes the relative safety of the operation today and expounds upon the improvement in general maternal mortality which has resulted from its use in such conditions as placenta previa, premature separation of the placenta, dystocia, and many others. The most frequent indication in 1959 was previous cesarean section. The overall incidence in modern obstetrical practice varies from 2 to 10 per cent with an average of about 5 per cent. The mortality is approximately 0.2 per cent, though figures as low as 0.08 per cent have been reported.

Transabdominal techniques of cesarean section are described by H. L. Riva. The classical upper segment operation and the usual lower segment operations with transverse or longitudinal uterine incisions are depicted. His techniques include far more suturing than is customary in my experience, including retention sutures, but the basic principles of the operations are well described.

Ralph Reis discusses cesarean hysterectomy noting the passing of the original indication for this procedure, infection. He feels that it is justified in certain cases in which myomata are present or very defective scars of previous sections, uncontrollable hemorrhage following cesarean section, carcinoma-in-situ of the cervix and placenta accreta. He further discusses cesarean hysterectomy for the purpose of sterilization and decries its use as a routine because of the increased risk of this operation over tubal ligation and the occasional unhappy psychological results of losing the uterus. He approves of this method of sterilization in selected cases.

Edward G. Waters describes his supravesical extraperitoneal cesarean section and gives figures which attest the safety of the operation in many hundreds of cases.

Greenhill writes of anesthesia in cesarean section, including inhalation, spinal, and local infiltration techniques. He expresses his preference for local and documents its virtues.

Maternal mortality and morbidity following cesarean section are discussed by Richard D. Bryant. He, too, emphasizes the relative safety of the operation. His review indicates about 30 deaths per ten thousand sections. The leading causes of death are "miscellaneous, hemorrhage, infection, embolism and anesthesia." The danger of rupture of a section scar in a subsequent pregnancy is considered. He feels that repeat section is justified.

H. Close Hesseltine analyzes the material at the Chicago Lying-In Hospital to answer the question "Does cesarean section offer special benefit to the fetus for survival?" in the negative except when done for a specific condition which threatens the life of the fetus. In the absence of such indication he found the fetal mortality to be twice as high as in similar patients who had their babies vaginally.

D. Frank Kaltreider and W. F. Krone discuss delivery following cesarean section and point out the factors involved in the selection of cases and the safeguards which must be erected in conducting such labors. They express a preference for repeat cesarean section.

The final section deals with postmortem cesarean section and is written by Henry P. Lattuada. He suggests that it should always be done when the pregnancy has progressed to the 28th week and not more than 20 minutes has passed since the mother expired.

On the whole this is an excellent symposium and gives a good review of current opinion and results.

The second section of the book begins with operations for congenital anomalies of the uterus by Howard Jones of Baltimore. Aplasia of the Müllerian ducts, or its overt clinical manifestation, congenital absence of the vagina is described. The operation which Jones favors for correction is that of placing a mould covered by split thickness skin graft in a space created artificially between bladder and rectum. Excellent results have been obtained. Also described are rudimentary uterine horn, blind uterine horn and the various degrees of double uterus. The Strassmann operation for removal of a uterine septum and creation of a single chambered uterus is described. The problems of the double vagina are related.

Mastroianni and Buxton describe operations for infertility in the female. In order of frequency these were tubal plastic procedures, the lysis of pelvic adhesions, wedge resection of polycystic ovaries associated with amenorrhea and defeminization, the removal of myomata, uterine curettage, tracheloplasty and hymenotomy. The etiology of tubal disease, its diagnosis, and techniques of repair are described. The use of polyethylene splints is described. Figures regarding the prospect of success are given.

Operations for habitual abortion are described by Abraham F. Lash. His particular emphasis is upon repair of the gaping incompetent cervix in the nonpregnant state. The Shirodkar procedure is described also.

M. Edward Davis discusses gynecologic operations at cesarean section. Tubal ligation is discussed and advised at the third or fourth cesarean section. In his hands a modified Pomeroy technique has reduced the percentage of failure to 0.25. The removal of a myoma at cesarean section is decried unless the tumor is pedunculated; or if the tumors are multiple and large and the patient has completed her desired child bearing, hysterectomy is advocated. Ideally ovarian tumors are removed at the fourth month of pregnancy but should they be present at section they can easily be removed at this time. Routine appendectomy at cesarean section is condemned as hazardous. Cesarean hysterectomy is discussed in some detail and excellent results are reported. The substitution of this operation for tubal ligation for sterilization is gaining in favor and the author espouses it.

Roger Scott discusses pelvic pain in association with external endometriosis, describing the various mechanisms of production. In addition he evaluates the use of hormones and of conservative surgery for pain relief. He also expresses the belief that hysterectomy per se may contribute to the relief of pain.

Vaginoplastic operations are described in general terms by D. A. D'Esopo and J. H. Pratt discusses the Heaney technique for vaginal hysterectomy. Good illustrations are provided.

Radiotherapeutic operations are described by James A. Corscaden. Techniques are described for cancer of the vagina, cancer of the cervix and cancer of the endometrium (as a preoperative measure).

Langdon Parsons describes pelvic exenteration giving valuable information regarding the selection of candidates for such surgery, contraindications, preoperative preparation and laboratory studies, and anesthesia. He gives a brief description of his technique. Various urinary diversion procedures are described. In his group of 120 operations there was a primary operative mortality rate of 22.5 per cent.

The last chapter by Frederick Hofmeister contains detailed descriptions of the various elements of the modern gynecologic examination in ordinary office practice.

In the reviewer's opinion this is a very useful little volume bringing before us as it does authoritative opinions and descriptions of the important aspects of cesarean section and advances in gynecologic surgery.

DANIEL G. MORTON, M.D.

* * *

PEDIATRIC ANESTHESIOLOGY—Second Edition—M. Digby Leigh, M.D., Associate Professor of Surgery, USC School of Medicine, and Director, Department of Anesthesia, Children's Hospital of Los Angeles; and M. Kathleen Belton, M.D., Assistant Professor of Surgery (anesthesia), USC School of Medicine, and Attending Anesthesiologist, Children's Hospital of Los Angeles; in collaboration with George B. Lewis, Jr., M.D., and Edward E. Scott, M.D., Children's Hospital of Los Angeles. The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y., 1960. 461 pages, $12.00.

"Pediatric Anesthesiology," Second Edition, is a completely new book by the authors of the first edition published in 1948 under the title Pediatric Anesthesia.

Dr. Wesley Bourne in the foreword of the original edition stated "Leigh and Belton have given wings to practical thought in anesthesia and have brought for the first time into its serene and soothing atmosphere the strongest element of Aristotelian simplicity."

At first, the reader of the second edition will wonder if this element of simplicity has not been somewhat lost in this new and far more comprehensive volume. A more careful inspection will soon reveal that this is not the case. The second edition has been, in fact, greatly enriched by such considerations as pre-anesthetic evaluation of the circulatory, digestive, nervous and urogenital systems.

The reviewer feels that most anesthetists who have read and enjoyed the first edition will do well to skip over the first eleven chapters comprising Section I and begin with Chapter 12 of Section II, which is devoted to anesthetics, techniques and equipment. If he will then continue through Section III (preanesthetics medication and preparation) and Section IV (anesthetic management of surgical procedures) reserving Section I for reference, he will soon discover that the writers have in no way lost their ability to write with "Aristotelian simplicity."

It is gratifying to see hypothermia and body temperature control discussed not only as an adjunct to surgery and anesthesia but as an important form of therapy with extensive clinical application. On the other hand, it is somewhat disappointing not to find a more exhaustive consideration of the problems incident to automatic ventilation of the lungs of small infants.

Pediatric Anesthesiology reflects the unmatched experience of the authors in this field. The text has grown from a universally praised monograph to a complete book which can be highly recommended to all those who have anything to do with the anesthesia care of infants and children. Pediatric Anesthesiology should find wide acceptance not only by anesthesiologists but by pediatricians as well.

WILLIAM B. NEFF, M.D.

* * *

NEWER VIRUS DISEASES—Clinical Differentiation of Acute Respiratory Infections—John M. Adams, M.D., Ph.D., Professor and Chairman, Department of Pediatrics, School of Medicine, University of California at Los Angeles. The Macmillan Company, 60 Fifth Avenue, New York 11, 1960. 292 pages, $5.75.

Most physicians are constantly faced with problems of respiratory infections which they know to be usually viral in origin. Knowing that techniques of virology have advanced rapidly, most physicians wish to be brought up to date on newly recognized viruses and the clinical entities they may be associated with. This volume appears to have originated in the author's sincere desire to disseminate some fundamental knowledge of virology together with some basic facts on the diagnosis and management of respiratory diseases. It is difficult to assess how well he has succeeded. Difficulties arise because the book intends to be "clinically useful" on the one hand, and up-to-date in virology on the other. Not infrequently these two viewpoints cannot readily be brought together. For the sake of brevity fairly sweeping generalizations are occasionally presented to suit the impatience of the practicing physician. Conversely some chapters contain brief summaries of recent publications without much interpretation—perhaps directed at the virologist?

For those physicians who snatch up the book because it promises "clinical differentiation of acute respiratory infections" the entirely proper conclusion is reached on page 19 that in a majority of viral respiratory diseases *clinical* differentiation is *not* possible because "the same clinical syndrome may be caused by many different agents."

In spite of these conflicts some physicians will find this book a useful general review of some viruses associated with respiratory tract disease, together with a brief description of some sound medical practices in the management of respiratory illness. Several regrettable errors were found in references to published literature.

STORY OF DISSECTION, THE—Jack Kevorkian, M.D., Philosophical Library, Inc., 15 East 40th Street, New York 16, N. Y., 1959. 80 pages, 16 illustrations, $3.75.

This slender volume purports to tell the story from the earliest times to the present of the use of the human body for both anatomical and pathological studies. All this is compressed into ten brief chapters which follow a conventional chronological order, beginning with Antiquity, passing through Classical Greece, Hellenistic Alexandria, Rome and Byzantium to the Middle Ages, the Renaissance and the Baroque Period, to terminate with the Nineteenth and Twentieth centuries. The purpose of the volume, according to the author in his introduction, is to reveal the fluctuation of attitudes towards dissection and to reveal how dissection "affected the subsequent growth of the healing art."

At its most elementary level historical writing must possess a creative element controlled by the iron discipline of the historical method. The present work fulfills neither of these fundamental requirements. In the first place it is based almost exclusively on secondary sources, many of which would appear to have been misinterpreted. In the second place it is full of erroneous statements and exhibits a lack of caution which betrays the tyro.

The first chapter opens with the astonishing observation: "Our insight into the works of the earliest times is totally dependent upon information transmitted in the medical writings of Homer and of the early Roman period, notably those of Cornelius Celsus and Claudius Galen. Original records, if they were left at all, have not survived the rigors of history." Dozens of records exist which antedate Homer and which originated in the interval between Homer and the early Roman period. What is to be said of such gaucheries which speak of "Mycenean and Minoan cultures of Homer's time," for the world which the Homeric poets pretend to describe is one which had disappeared hundreds of years before and the Dark Ages of the Dorian invasion had intervened. Then not only is the Egyptian chronology used somewhat antiquated but the author naively accepts the view that "several medical books were written by Menes, founder of the First Dynasty in 3400 B.C.," and further, dismisses all modern Egyptological scholarship by stating that "none of its [Ancient Egypt's] contributions to medicine was of permanent or influential nature," apparently unaware of the source of many of the Hippocratic aphorisms, of Cnidian medical thought, of Pythagorean opinions, of the Dioscoridean materia medica, and of numerous other Greek works, to say nothing of the word for word translations of Egyptian writings surviving to the Renaissance. In the difficult Greek period, the author becomes greatly entangled. Apart from the unintelligible statement that "A materialistic outlook dominated the thought of the early great philosopher-scientists such as Anaxagoras (500-428 B.C.) and Empedocles (504-443 B.C.) and undoubtedly conditioned exaggerated reverence for corpses of the earlier period," we are told that the "Dogmatists emphasized the doctrines of Hippocrates" on page 18, and on page 20 that "The Dogmatic School of Hellenism was an adherent of Aristotelian teachings and probably a direct consequence of it." Then Herophilos and Erasistratos are categorically accused of human vivisection although the practice was protested by "many of their illustrious contemporaries" and by "later historians such as Galen and Tertullian." This charge has been made against many other anatomists at varying times. In the case of the Alexandrians, Herophilos and Erasistratos, no contemporary evidence is known. The charge was made by Celsus and the imperious, intractable, anti-pagan Tertullian hundreds of years later. Although Galen was educated at Alexandria, and even wrote a diatribe against Erasistratos yet, contrary to the statement of the author, his works are entirely silent on the subject of human vivisection. This very silence has made the charge highly suspect. However, what is one to think of an author who is not only in gross historical error, but justifies the practice of human vivisection with "It was the noteworthy consequence of earnest contemplation and sincere conviction, the very serious means to a very noble end." In the Roman Period Soranus is reported to have "occasionally dissected a woman's body," which is at variance with the grave doubts expressed by O. Temkin in his superb study of this writer. Likewise, without any documented evidence, the author credits Galen with having dissected "no more than two or three human bodies after having left Alexandria," despite the fact that no serious student of Galen has ever been able to prove unequivocally that Galen dissected even a single body. The further statement that Galen was "Cognizant of the anatomic differences between man and animals," apart from surface superficialities, cannot be supported, or is open to gravest doubts.

It is possible to go on documenting factual error after error which mar almost every page, but it is too discouraging, especially when we find Sylvius (Jacques du Bois) acting in the year of his birth, 1478, as the first prosector at the University of Paris, and that Fallopius and Eustachius "paved the way for the great work of Andreas Vesalius," although they worked and wrote many years after, not before, Vesalius. Enough has been said to point to the total unreliability of this book.

J. B. deC. M. Saunders, M.D.

* * *

OLDER PATIENT, THE—By Twenty-One Authors—Edited by Wingate M. Johnson, M.D., Chief of Staff, Private Diagnostic Clinic, and Professor Emeritus of Clinical Medicine, Bowman Gray School of Medicine of Wake Forest College. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 589 pages, $14.50.

The geriatric patient requires of the doctor a special interest and orientation if he is to have the best attention. The doctor must not only know the subject but he must find a challenge in the care of the aged if he is to do good work.

Old people are likely to have a monotonous congeries of disabilities—cataract, lack of teeth, bronchitis, emphysema, cardiac weakness, hernia, prostatism, varicose veins, etc.—the importance of which must be sorted out and put in balance by the doctor. This book helps to do just that, and while there is necessarily an overlap between old age medicine and other medicine the emphasis here is plainly on geriatrics. The writers of the various chapters have kept this clearly in mind and the result is a fine treatise which no one interested in old patients can afford to be without.

Arthur L. Bloomfield, M.D.

* * *

WOMEN AND FATIGUE—A Woman Doctor's Answer—Dr. Marion Hilliard. Doubleday & Company, Inc., 575 Madison Ave., New York 22, N. Y., 1960. 175 pages, $2.95.

This book is written in simple form and language for the lay public, particularly nervous, tired women.

It deals with some of the real and fancied problems of the adolescent, the married woman, the spinster and the menopausal soul. The explanations and Dr. Hilliard's advice are given in general terms, much of it inspirational. Acceptance of hereditary limitations, metabolic changes, and environmental stress, and adaptation to them, are presented as a practical solution to fatigue.

The book is rather superficial and perhaps more suitable for serialization in a women's home magazine or some Spanish count's column.

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1. Eisen, H. N., and Tabachnick, M.: Protein Metabolism, M. Clin. North America *39*:863 (May) 1955. 2. Jamison, R. M.: General Nutritive Deficiency, Virginia M. Month. *83*:67 (Feb.) 1956. 3. Goldfarb, A. F.; Napp, E. E.; Stone, M. L.; Zuckerman, M. B., and Simon, J.: The Anabolic Effects of Norethandrolone, a 19-Nortestosterone Derivative, Obst. & Gynec. *11*:454 (April) 1958. 4. Batson, R.: Investigator's Report, Feb. 11, 1956. 5. Weston, R. E.; Isaacs, M. C.; Rosenblum, R.; Gibbons, D. M., and Grossman, J.: Metabolic Effects of an Anabolic Steroid, 17-Alpha-Ethyl-17-Hydroxy-Norandrostenone, in Human Subjects, J. Clin. Invest. *35*:744 (June) 1956. 6. Brown, C. H.: The Treatment of Acute and Chronic Ulcerative Colitis, Am. Pract. & Digest Treat. *9*:405 (March) 1958.

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Tests Inconclusive on Value Of Fluoride Toothpastes

So far there is no conclusive proof that fluoride toothpastes prevent tooth decay.

At present, one can only speculate or theorize regarding the value of fluoride dentifrices in controlling decay, according to Francis A. Arnold, Jr., D.D.S., National Institute of Dental Research, Bethesda, Md.

"The results of clinical trials made so far are as controversial as are those obtained by the use of other dentifrices," he said.

Dr. Arnold's remarks were in a report on the present status of dental research in the study of fluorides appearing in the April *Archives of Industrial Health*, published by the American Medical Association.

He made these other points:

—The use of fluoride compounds, which are applied by dentists, are of value in preventing decay, particularly in areas where fluoridation of public water supplies is not feasible.

—The use of fluoride supplements to the daily diet presents problems and requires daily supervision. Such supplements are most effective during formation of the teeth.

—More than 1,500 communities are fluoridating their water supplies. This method undoubtedly has as much scientific support for its safety and effectiveness as any other public health procedure.

Pacemaker Restoring Invalids To Active Life

An improved electronic pacemaker, a device that stimulates the heart, is restoring incapacitated cardiac patients to an active life.

The device, originally designed for persons who had undergone heart surgery, is now being used increasingly for nonsurgical patients who sustain heart block as a complication of various afflictions of the heart muscle, according to a current issue of *Journal of the American Medical Association.*

The portable, lightweight, transistorized pacemaker consists of a self-contained battery of long life which delivers a repetitive electrical stimulus by means of a stainless steel electrode which is implanted in the heart and runs through the chest wall to the externally worn pacemaker.

Because the entire apparatus is self-contained and only slightly larger than a package of cigarettes, the patient can use it with complete freedom of movement.

For this reason it has been found to be particularly useful for persons who, after the heart block occurs, are incapacitated because of intermittent

(Continued on Page 60)

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Pacemaker Restoring Invalids To Active Life

(Continued from Page 59)

fainting spells or because their heart is too weak to permit physical activity, the *Journal* article said.

The article was prepared by C. Walton Lillehei, M.D.; Vincent L. Gott, M.D.; Paul C. Hodges, Jr., M.D.; David M. Long, M.D., and Earl E. Bakken, B.E.E., department of surgery and the Variety Club Heart Hospital, University of Minnesota Medical School, Minneapolis, on the basis of 66 surgical and nonsurgical patients at the University of Minnesota Hospital who used the miniature pacemaker.

The longest continuous stimulation of a nonsurgical patient's heart by means of the device has been 15 months, the authors said, and it was still in use.

"The question of how long stimulation can be maintained appears to be related to electrode materials, design, and technique of implantation," they said. "If an electrode does fail, another may be implanted."

The authors also said a future refinement of such devices probably will be the use of electromagnetic induction to replace the electrode.

". . . experimental work in dogs has indicated the feasibility of implantation of a tiny coil within the myocardium and the use of electromagnetic waves through the intact chest wall from a transmitter on the skin surface," they said.

An Orange Causes Shock In First Reported Case

The first reported case of shock associated with an acute allergic reaction to orange juice is described in the May 21 *Journal of the American Medical Association.*

Drs. Gordon Bendersky and John A. Lupas said a 48-year-old woman entered Hahnemann Medical College and Hospital in Philadelphia complaining of dizziness and a diffuse skin rash several hours after eating a fresh orange.

The patient's allergic reaction to fresh oranges was confirmed by a skin test.

The woman claimed to have eaten oranges all her life without adverse reactions until two years prior to her admission. At that time she had developed a skin rash and some general swelling after eating a fresh orange. She said she had not eaten any oranges or any food containing oranges between that occurrence and the present one.

The patient responded to drug therapy and was discharged after eight hours in the hospital.

The authors said the ingestion of fruits has been known to cause certain ailments, such as diarrhea, migraine, and asthma, but this was the first time to their knowledge that an orange had been reported as a cause of shock.

Dr. Lupas now is on the staff of the District of Columbia General Hospital, Washington, D .C.

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New Liquid Formula Diet Presents Wide Possibilities

A new mineral and protein-free liquid formula diet has been tested successfully among a group of volunteer college students.

Dr. Victor Vertes, division of medicine, Mt. Sinai Hospital, Cleveland, said the liquid concentrate (Controlyte) promises to be valuable for many conditions in which mineral and protein intake must be avoided or controlled.

Writing in a recent *Journal of the American Medical Association,* the Cleveland physician said the formula was found to be "palatable and well tolerated" when taken by the healthy students during a three to five-day test in contrast with many previous formula diets.

None of the subjects, 19 men and one woman, complained of hunger, although six craved solid food.

Weight losses ranged from 3 to 11 pounds. Some weight loss was expected, Dr. Vertes said, because the calories provided were not adequate for such active subjects. Preliminary data indicate that weight loss does not occur in hospitalized patients.

Dr. Vertes said there has been an obvious need for such a formula but difficulty had been encountered in the past in reducing the mineral content to a reasonably low level.

The new formula, which contains carbohydrate and vegetable fat, represents a "98 to 99 per cent" removal of minerals compared to a normal diet, he said.

The diet may benefit persons with cirrhosis of the liver, congestive heart failure, kidney disease, and other disorders in which sodium retention is a factor, he said.

"Patients who cannot adhere to routine low-salt diets might be benefited by periodic use of the

(Continued on Page 70)

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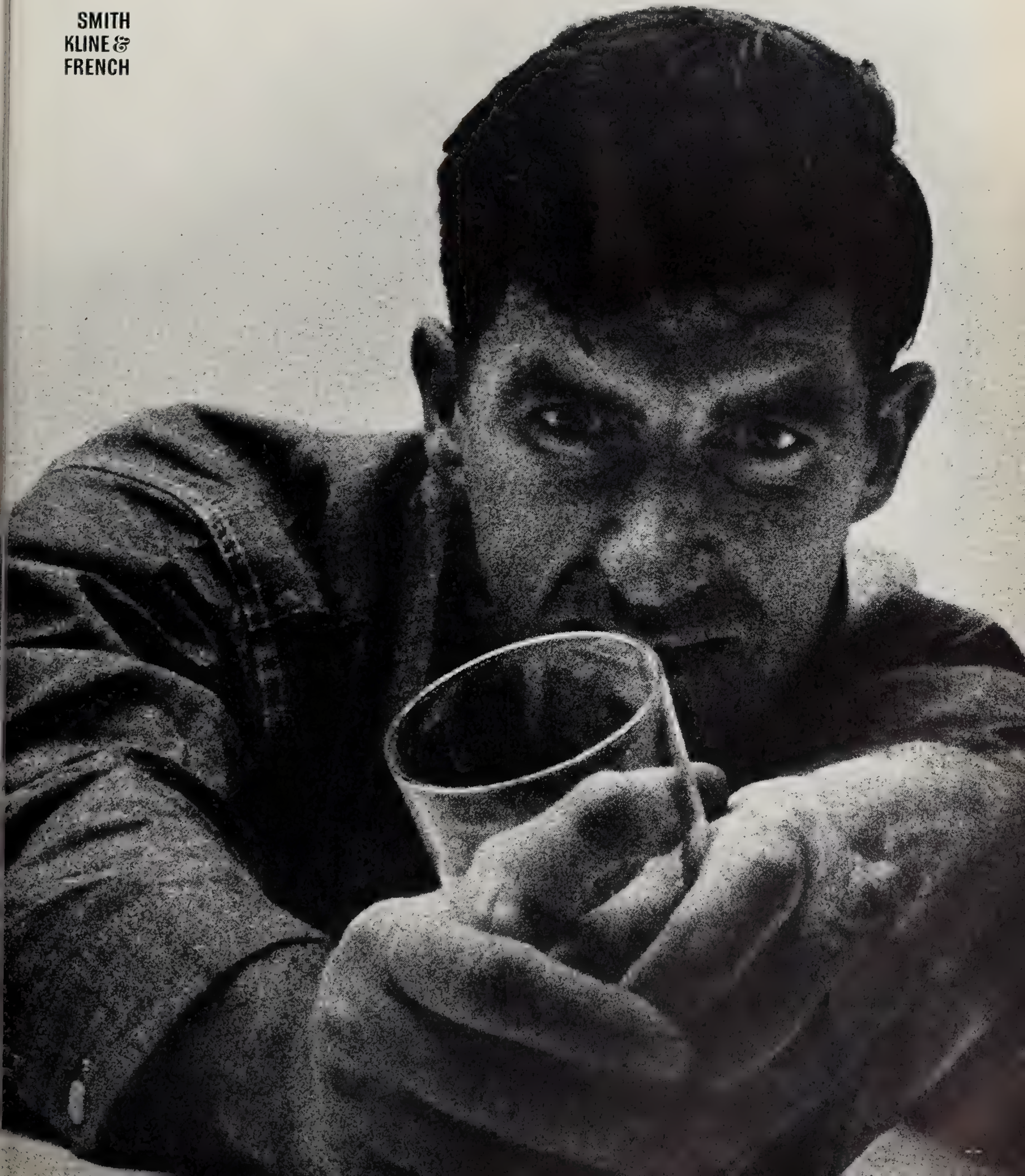

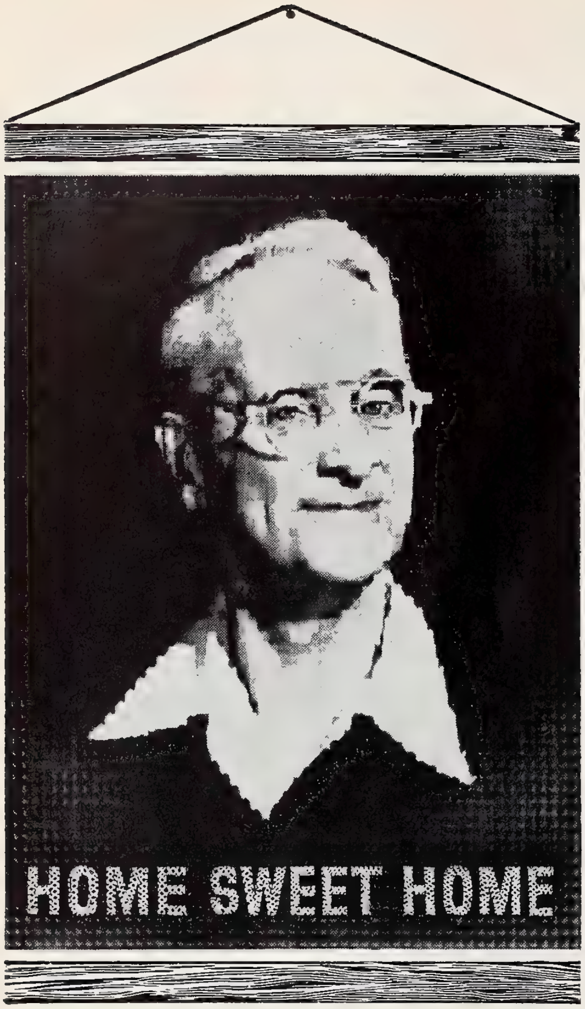

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Page 669

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Babies Need Early Shots Against Whooping Cough

A baby's best protection against whooping cough is early vaccination or the immunization of the older children in the family, two San Francisco physicians have stated.

Whooping cough (pertussis) remains second to bronchopneumonia as "the most significant infectious disease of infancy," Drs. Stephen Kaufman and Henry B. Bruyn said in a recent issue of *Journal of Diseases in Children*, published by the American Medical Association.

They said a study of the 199 patients with whooping cough who were admitted to San Francisco General Hospital during a 10-year period showed child-to-child contact within the home was "the most important means" by which whooping cough is contracted.

The newborn can be best protected by adequate primary immunization or booster inoculation of other children in the family before the baby arrives.

The usual method of immunization consists of three shots one month apart beginning at one to two months of age, they said.

"This type of immunization will prevent the disease or mitigate its severity," they said.

Because the greatest sickness and mortality due to whooping cough occurs during the first three months of life, they said, protection against the disease is of "major importance" at that age.

Thirty-eight per cent of the patients in the San Francisco study were under six months of age and 57 per cent were under one year. Almost half of them contracted the disease from another child.

The two physicians said whooping cough is "still a significant and dangerous disease, causing more deaths in the first year of life than measles, scarlet fever, diphtheria, and poliomyelitis combined."

However, they said, "with the reduction of the danger of secondary bacterial complications through the use of appropriate antibiotics, the mortality rate has been reduced markedly."

Both physicians are affiliated with the department of pediatrics, University of California Medical Center.

New Liquid Formula Diet Presents Wide Possibilities

(Continued from Page 68)

formula as an adjunct to other therapies," he added.

The diagnostic uses of such a formula are multiple, Dr. Vertes said. For example, he said, the special diet kitchens, trained personnel and complicated laboratory processes now required to study a patient's metabolism could be eliminated since any "fair-sized hospital" could perform metabolism studies if the formula were the sole food given the patient.

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Immersion Seen as Possible Key To Outer Space Travel

Experiments with mice have shown that immersion offers "highly effective protection" against the sudden acceleration in velocity necessary to send man on exploratory trips in outer space.

The experiments were conducted by Dr. B. Black-Schaffer and G. T. Hensley of the University of Cincinnati College of Medicine and reported in *Archives of Pathology*, published by the American Medical Association.

"Nature has provided the design of an ideal space capsule: the amniotic sac and its fluid," the two pathologists said.

To simulate the conditions of the amniotic sac, the protective enclosure in which the unborn baby develops, they chilled baby mice until they were in a state of suspended animation (i.e., a cessation of respiration, heart beat, and metabolism) and immersed them in transparent bags containing a briny solution. The mice then were put in a centrifuge that spun them at various velocities.

They found that immersed mice could survive stresses of acceleration that killed other mice, also in a state of suspended animation, but not immersed.

The exploration of outer space will require the

(Continued on Page 86)

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In a recent study[1] of 40 patients with asthma, 33 patients (82.5%) reported Bronkotabs brought fair to good relief from asthmatic symptoms. Asthma relief was expressed by ease of expectoration of secretions, reduction of bronchospasm, and increased vital capacity. "The combination of drugs used in . . . [BRONKOTABS] . . . gave greater relief in these patients than the conventionally used tablet [ephedrine, theophylline, phenobarbital] . . ."

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References: 1. Spielman, A. D.: In press. 2. Schwartz, E., et al.: Am. Pract. & Digest Treat. 7:585, 1956. 3. Ogden, H. D., and Fuchs, M.: J. Louisiana M. Soc. 111:175, 1959. 4. Drill, W. A.: Pharmacology in Medicine, New York, McGraw-Hill Co., 1954, p. 41.

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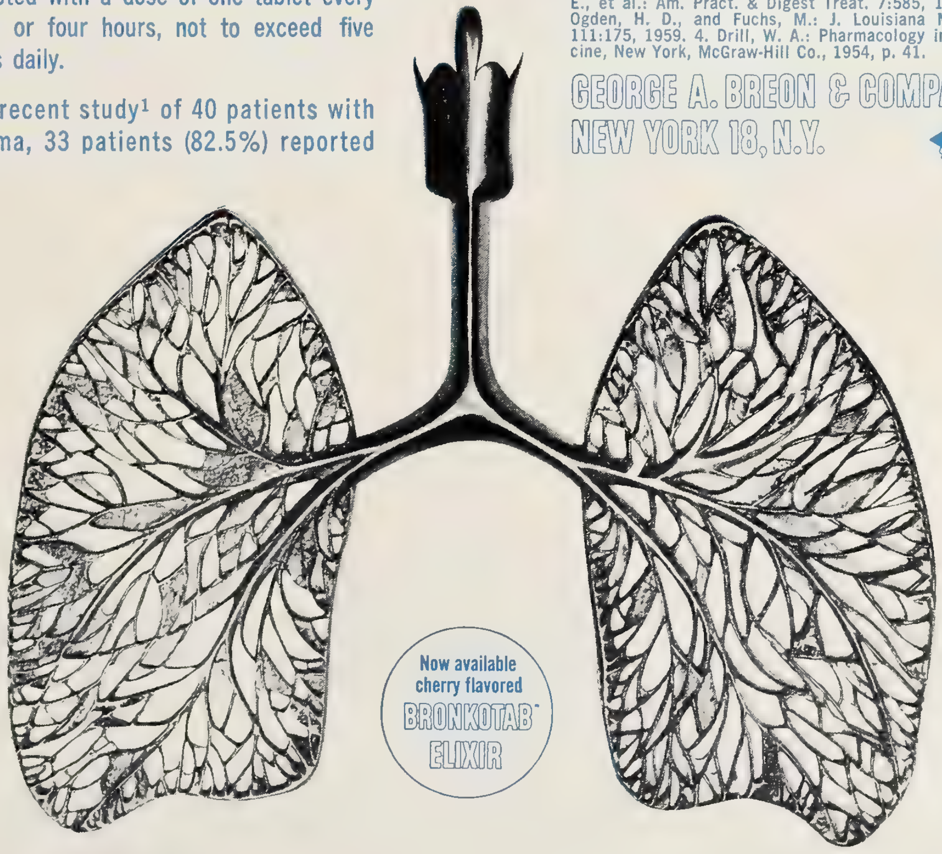

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Immersion Seen as Possible Key To Outer Space Travel

(Continued from Page 82)

transit of vast distances over periods of time equivalent to geologic eras, the two researchers said.

A possibility of circumventing this space-time obstacle exists, however, in Einstein's theory stating that with increasing uniform velocity, time slows relative to an observer on earth, they said.

"This property of uniform velocity begins to assume significance for space travel at a speed approximating that of light itself," they explained. "With this 'relative' clock measuring the passage of time, man could attempt the exploration of outer space if a means could be found of protecting him against the great forces generated in the short time during which such velocities should be attained."

They said their experiments are a step toward solving the problem in that they proved that mice when immersed are protected against an accelerative stress leading to a constant speed of 14,500 miles per second (compared with the speed of light which is 186,300 miles per second).

A constant velocity of 14,500 miles per second would result in a slowing of the space traveler's time relative to that of earth by one per cent, they concluded.

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Elderly Remain Sexually Active After 90, Study Shows

Elderly persons, if reasonably healthy, continue to be sexually active beyond the age of 90, a study revealed recently.

The sexual activities and attitudes of 250 volunteer geriatric subjects were studied by members of the Duke University department of psychiatry, Durham, North Carolina, as part of an extensive evaluation of the aging process.

An article on the study by Drs. Gustave Newman and Claude R. Nichols appears in a recent issue of the *Journal of the American Medical Association.*

"Little has been reported concerning the sexual activity and attitudes of older people," the physicians said. "There have been many misconceptions, certainly, about the role of sex in the lives of older people in our society."

The group studied represented a generally successful adaptation to aging. None was hospitalized or living in nursing homes or homes for the aged. They ranged in age from 60 to 93.

The authors concluded that "although older people experienced a decline in sexual activity and strength of sexual drive . . . given the conditions of reasonably good health and partners who are also physically healthy, elderly persons continue to be sexually active into their seventh, eighth, and ninth decades."

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Bee Stings More Deadly Than Snake Bites

More Americans will die this year from insect stings than from snake bites, an article in the July *Today's Health* magazine said.

"Each year, more Americans die from the stings of the little insects buzzing in our gardens and parks than from bites of all venomous reptiles combined," according to the magazine published by the American Medical Association.

"Most medical authorities are convinced that severe reactions to insect stings are the result of an allergy," the article said.

No one knows exactly how many persons are allergic to the stings of insects, but in the opinion of one allergist "severe reactions to insect stings occur more commonly than is generally supposed."

"In fact, it is possible that unrecognized cases account for some of the sudden deaths attributed to heart failure and heat prostration in the insect season," Dr. Harry L. Mueller of Boston said.

The insects that cause most of the reactions are the honeybee and bumblebee and three kinds of wasps—yellow jacket, hornet, and Polistes — although about 25 other insects have been reported to produce allergic symptoms in man.

Because their nests are hidden and they are easily irritated, yellow jackets account for most of the insect stings. Honeybees and bumblebees are much less likely to sting.

A knowledge of the nature of bees and wasps can be of help in avoiding stings, the article said, making these points:

If you see more than two yellow jackets or bumblebees disappear under leaves in a woods, it is likely that their nest is located there. Bees and wasps usually sting only when their nests are threatened or they are actually touched.

If you are buzzed by a bee or wasp, never flail at it with your arms. Walk slowly away. Stinging insects are more apt to attack a fast-moving object because they are sensitive to air movements and sudden motion.

Bees seem to be angered by dark shades, whereas white or khaki clothing does not bother them.

To keep yellow jackets and bees from gathering at picnic tables, spray the area with a repellent chemical.

Bees and wasps are attracted by hair oils and perfumes which contain floral odors.

Finally, be sure that there are no nests of yellow jackets, bees, or other wasps in the immediate area of your house or yard. Killing a nest is a tricky business and a trained exterminator should be hired for the job.

The author of the article is Peter Farb.

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Twins Should Be Treated As Individuals

Twins, who physically may be hard to tell apart, psychologically need and seek individual recognition, according to an article by Flora Rheta Schreiber in *Today's Health* magazine.

"Twins struggle for an identity which, because of the very circumstances of their birth, is constantly threatened with eclipse," the article said. "Twins therefore find it necessary to assert a cherished individuality and to demand individual recognition."

There is scientific proof, the article continued, that even identical twins are not carbon copies of each other.

"They are apt to begin life at different sizes and to grow at different rates," it said. "They have different aptitudes, talents, interests, and skills."

To help twins adjust to a world that thinks of them as one rather than as two, the article said parents should:

—Dress twins differently and give them different toys.

—Treat them as individuals by playing up their special skills and talents.

—Refer to them by their names, never "the twins."

—Educate outsiders not to ask the twins, "Which one are you?"

—Encourage each twin to develop his own interests.

—Encourage each twin to cultivate some friends he can call his alone.

—Encourage each twin to spend some time on his own away from home.

Antibiotic Warrants Attention As Cancer Inhibitor

Actinomycin D, an antibiotic isolated in 1954, has demonstrated sufficient antitumor potency to warrant a study of its ability to inhibit cancer.

An article on the effect of the antibiotic on childhood tumors appears in the May *Journal of Diseases of Children*, published by the American Medical Association.

Actinomycin D was administered intravenously to 12 youngsters with inoperable malignancies during a two-year study at the General Medicine Branch, National Cancer Institute, National Institutes of Health, Bethesda, Md. Antitumor responses were observed in seven.

"The antitumor effect of actinomycin D in 6 of the 12 patients was very dramatic," the article said.

"The rapid reduction in size of tumor masses within a few days and the prompt reversion of severe metabolic abormalities towards normal . . .

(Continued on Page 24)

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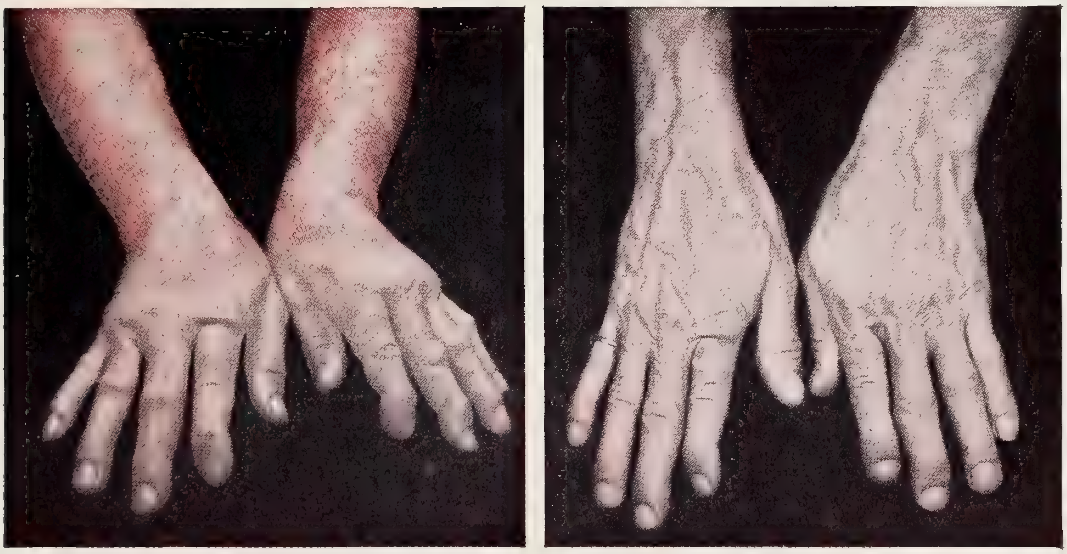

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A.M.A. Official Assails Folk Medicine Book

The honey-and-vinegar theories of Dr. D. C. Jarvis in his best-selling book, "Folk Medicine," have been assailed as fanciful by an official of the American Medical Association.

Philip L. White, Sc.D., secretary of the A.M.A.'s Council on Foods and Nutrition, said Dr. Jarvis "has combined honey and vinegar and given the mixture some really fanciful properties."

Writing in the June A.M.A. magazine, *Today's Health*, Dr. White said, "The sugars of honey are easily utilized by the body, and honey is a soothing syrup; other than that, no special claims can be made."

He took exception to Dr. Jarvis' contention that honey fills in any gaps that might occur in the daily food intake.

"Honey is 20 per cent water and 79.5 per cent carbohydrate," Dr. White said. "Thus, 99.5 per cent of honey is either water or sugar. The protein content is about 0.3 per cent; that doesn't leave much room for anything else.

"The vitamin content is such that in one tablespoon . . . there are not vitamins in sufficient amounts to mention."

Vinegar, he said, is usually made from partially fermented apple juice containing about 5 per cent acetic acid.

"Certainly there is nothing in honey or in vinegar which can support the claims made by the author of this book," Dr. White concluded.

Antibiotic Warrants Attention As Cancer Inhibitor

(Continued from Page 18)

indicate that this compound is very active in certain childhood neoplasms.

"Unfortunately the duration of the remissions is short, usually about four to six weeks."

However, the authors of the article said "the marked, albeit transient, antitumor effect of this antibiotic indicates that this class of compounds deserves major attention in cancer chemotherapy investigation."

"On a weight basis," they said, "it is the most active antitumor agent now available. The structural formula of this agent is unrelated to any other type of antitumor agent now known, indicating that it probably has a unique mechanism of action. Finally, of several antibiotics which have been tried in cancer chemotherapy, it is one of the few with definite clinical benefit."

The drug caused some side effects. However, the researchers said, recovery from toxicity was rapid.

The article was written by Drs. Richard K. Shaw, Edward W. Moore, Peter S. Mueller, Emil Frei III, and Donald M. Watkin.

Practical Use of Hypoglycemic Agents

"The cornerstone of all proper treatment of diabetes mellitus is a diet adjusted to the patient's weight, height, sex, physical activity, and diabetic status," said Dr. Frank S. Perkin, Clinical Associate Professor of Internal Medicine, Wayne State University, College of Medicine, writing in the May 7th issue of the Journal of the American Medical Assn.

The article went on to state: "With the advent of multiple hypoglycemic agents, there has been a radical change in the approach to the treatment of diabetes and perhaps considerable confusion in the mind of the average physician as to the proper course to pursue. There is already evidence that administration of these agents may not be the best treatment available for the individual patient. It would seem advisable to attempt some evaluation of hypoglycemic agents and attempt to assign them their proper role in the light of our present knowledge even though, in the case of some of the newer agents, this admittedly is still inadequate.

DIET AND INSULIN

"One can first mention a diet properly correlated to the patient's weight, height, sex, physical activity, and severity of the diabetes. When this diet has been adhered to for a period of time, and assuming that severe acidosis is not present, it is remarkable how many patients require no further hypoglycemic agent. This is the cornerstone of all proper treatment and is being neglected by many physicians for easier methods.

"If this measure fails to obtain satisfactory fasting and nonfasting blood sugar levels, that is, good control, then our second most important weapon is insulin. Here only a few points will be covered. It is as important to avoid overdosage and hypoglycemia as it is avoid underdosage and glycosuria and acidosis. Results of the improper use of protamine zinc insulin some 20 years ago in truly labile diabetics can now be seen. Consequently, it is of interest that some of our present work indicates that the duration of hypoglycemia is the most significant factor in producing cerebral cell damage, the severity second, and the frequency of reactions of least importance.

"Today there are a number of useful insulins available. Regular insulin is essential in the treatment of acidosis and coma and may be used advantageously in proper combination with protamine zinc insulin. It must be remembered that we are dealing with an unsaturated insulin, or with isophane (NPH) and globin insulins which are saturated, that is, which will reflect all of the regular

(Continued on Page 42)

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Practical Use of Hypoglycemic Agents

(Continued from Page 41)

insulin effect. The lente insulins have proved a worthwhile addition to our armamentarium, and the proper use of the lente triad as described by Whitehouse and others affords a homogeneous mixture which may be tailored to the patient's needs. It is not advisable in the average case to use more than 60 to 70 units of any insulin or mixture in one dose in regular treatment; diabetes in most juveniles is best controlled on two doses daily, about two-thirds before breakfast and one-third before the evening meal. In patients in whom the disease is difficult to control, as the unstable and the truly labile, better results may be obtained by adjusting the evening dose according to the sugar level of the predinner urine specimen. For example, 30 units of insulin should be given if the sugar level is 4+ or 3+, 26 units if the level is 2+ or 1+, and 22 units if the result is negative. Many reactions will be avoided in this manner.

"In connection with the administration of insulin, there has been a revival of interest in the jet administration method first described in 1950. In the ensuing years a small group of patients (about 20) have continued to take their insulin in this manner. Most of them have been blind persons unable to use the syringe method or persons with lipodystrophy who were able to avoid this complication by jet injection. While this mode of treatment has been a disappointment due largely to inability to obtain consistently satisfactory instruments, it is again being proposed as an available substitute for syringe injection. While in the ensuing years many of the patients for whom this instrument would have been of value have had satisfactory results with orally given drugs, it is still possibly of potential value, particularly in juvenile diabetes.

ORALLY GIVEN SULFONYLUREA

"In recent years a third measure has been available in use of orally given hypoglycemic drugs. The first such drugs to be introduced in the United States were carbutamide and tolbutamide (Orinase). Carbutamide was found to have a relatively high evidence of side-effects and its use was discontinued. Tolbutamide is still widely used. Later chlorpropamide (Diabenese) was introduced. Recently another drug, metahexamide, was extensively studied, and while it was perhaps the most effective of those discussed, it was abandoned, at least for the present, because of an unexpected occurrence of late hepatic effects. These drugs belong to the sulfonylurea group and seem to act by stimulation of the beta cells of the pancreas to produce further insulin.

"Other mechanisms of their effect have been claimed, such as decreased hepatic glucose output, but it has been recently shown that this is also an insulin effect. Sulfonylureas are not effective in depancreatized animals, or human beings, or in the juvenile diabetic with a severe case. If we eliminate cases of poor control due to the presence of intercurrent infections, poor patient cooperation, injections into areas of lipodystrophy, etc., the sulfonylureas have not shown any effect on the truly labile diabetic. However, Fajans and Conn have shown that in the very early and mild stage of diabetes in juveniles, sulfonylureas are effective and may to some degree delay or possibly abort the usual more severe type.

"Details of dosage are well described in many sources. It should be noted that equivalent sulfonylurea blood concentrations are obtained by a dose of chlorpropamide that is one-sixth the size of the dose of tolbutamide or carbutamide and about one-tenth the size of the dose of metahexamide. At present tolbutamide is the most commonly used oral hypoglycemic agent.

PHENFORMIN

"One other orally given hypoglycemic agent, phenformin (DBI), which is not a sulfonylurea but a biguanide, has been made available. This drug is remarkable as it has replaced as much as 70 units of insulin daily and so far has shown little, if any, laboratory side-effects. In our patients, it has reduced the insulin requirements of the truly labile diabetic by 10 to 50%. Its apparent site of action is in the enzymatic cycle, and it is claimed that it increases the peripheral utilization of glucose. Although some insulin must be present in the body and thus is not effective in the depancreatized person, phenformin would seem to be significant as it has a role that is not fulfilled by diet, insulin, or sulfonylureas in the truly labile diabetic, and it is useful as an adjunct to insulins of other types. Recently two patients with secondary sulfonylurea failure have shown an excellent response to a combination of sulfonylurea and phenformin. Both patients had consistently refused to take insulin. In our experience phenformin has also been reasonably satisfactory in the treatment of mild stable diabetes in adults, in whom the results are similar to those obtained with the sulfonylureas, with the added assurance that secondary failure is unlikely to occur with the biguanide.

"Phenformin may produce severe gastrointestinal distress and hence cannot be used by some patients and can be used only in relatively small dosages by others. It is stated that such cases number some 5 to 7%. In our group this figure has been somewhat higher, possibly because of the larger dosage used, although our maximum has been 200 mg. daily. The cause is not local gastric irritation but central nervous system effect. This may often be obviated by use of split dosages, time-release tablets, and by drugs combating the cerebral effect. Because of its unique role in diabetic therapy, phenformin may prove to be of considerable importance."

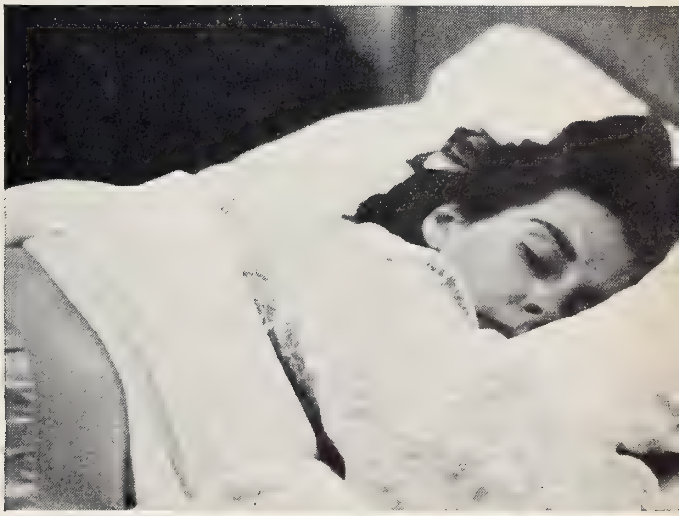
The physician listens to a tense, nervous patient discuss her emotional problems. To help her, he prescribes Meprospan (400 mg.), the only continuous-release form of meprobamate.

The patient takes one Meprospan-400 capsule at breakfast. She has been suffering from recurring states of anxiety which have no organic etiology.

She stays calm while on Meprospan, even under the pressure of busy, crowded supermarket shopping. And she is not likely to experience any autonomic side reactions, sleepiness or other discomfort.

She takes another capsule of Meprospan-400 with her evening meal. She has enjoyed sustained tranquilization all day—and has had no between-dose letdowns. Now she can enjoy sustained tranquilization all through the night.

Relaxed, alert, attentive . . . she is able to listen carefully to P.T.A. proposals. For Meprospan does not affect either her mental or her physical efficiency.



Peacefully asleep . . . she rests, undisturbed by nervousness or tension. (Literature on Meprospan is available from Wallace Laboratories, Cranbury, N. J.)

pHisoHex®

(antibacterial, nonalkaline, nonirritating, hypoallergenic detergent)

augments therapy with excellent results

pHisoHex, containing 3 per cent hexachlorophene, provides *continuous* antibacterial action against infection for patients with acne. Much more effective than soap in cleansing, it deposits hexachlorophene ". . . as a semi-permanent film on the skin of frequent users."[1] When the regular use of pHisoHex was added to the standard treatment for acne, "no patient failed to improve."[2]

1. Smylie, H. G.; Webster, C. U., and Bruce, M. L.: *Brit. M. J.* 2:606, Oct. 3, 1959. 2. Hodges, F. T.: *GP* 14:86, Nov., 1956.

Winthrop LABORATORIES
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1423M

Folic Acid in Vitamin Pills Can Hide Signs of Anemia

Multivitamin pills containing folic acid can hinder the diagnosis of pernicious anemia, according to a recent article in the *Journal of the American Medical Association.*

Dr. A. B. Curry Ellison, Charleston, West Virginia, described two cases in which a diagnosis of pernicious anemia was obscured because the patients had taken vitamin preparations containing folic acid.

One patient had been taking two or three vitamin capsules, containing 1 milligram of folic acid each, and another preparation, containing 1.7 milligrams, twice a day. The other patient had been taking one or more capsules per day each containing .33 of a milligram of folic acid.

Dr. Ellison said six other such cases had been reported previously and added that there are undoubtedly many that have gone unrecognized or unreported.

"It is my opinion, as well as that of many astute physicians, that folic acid should be removed from all multivitamin and iron preparations," he said. "Folic acid should be dispensed in individual tablets and used for those few specific conditions in which it is indicated."

Dr. Ellison said the daily requirement of folic acid for the human being has not been determined, and that folic acid was added to some vitamin preparations "without adequate therapeutic evidence of need."

(Folic acid is one of the vitamins of the B complex group. Folic acid is needed for normal function of the intestines and in the formation of red blood cells. It is found in green vegetables, and the body also is able to manufacture it.)

Cancer of Gallbladder Not a Rarity

Cancer of the gallbladder cannot be considered a rare ailment and it represents "a real threat to life," two surgeons warned recently.

Drs. Alec Horwitz and Jacob Rosensweig, Washington, D. C., writing in the May 21 *Journal of the American Medical Association,* said they had found 20 cases of cancer of the gallbladder among 324 patients 50 years old or older suspected of having gallstones.

They said this 6 per cent incidence should serve as a warning to those who complacently harbor gallstones for years on the theory that "if they don't bother you. don't bother them."

Because the disease was so far advanced when first seen, removal of the gallbladder was possible in only 8 of the 20 cancerous patients. Four of the eight died shortly after their operations, and the other 16 eventually succumbed also.

Continued on Page 58)

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Medical Planning for Disaster

Brief Résumé of Accomplishments in California 1950-1959

JUSTIN J. STEIN, *M.D.*, Los Angeles

• Extensive accumulation and dispersal of medical supplies and equipment has been carried out in this state since 1950. Although such medical supplies and equipment are inadequate for an all out war type disaster their addition to the medical disaster preparedness program represents a great contribution and efforts must be made to continually supplement them.

All hospitals must have a disaster plan which is well understood and which must be tested by actual test exercises at least once each year.

Preparations for major disasters of all types are costly and time-consuming but represent one of the best possible investments which we can make as insurance against the loss of thousands of casualties.

It is the responsibility of each physician to prepare himself and his family in anticipation of being exposed to natural or man-made disasters.

After the initial attack on Korea in June of 1950, disaster preparedness preparations assumed a high priority in California. The governor held a special session on this subject and some of us who were assigned disaster duties by different organizations remained in Sacramento at that time for approximately two weeks to attempt to set up a medical and health plan as well as a radiological defense plan. A special overall planning committee was formed and approximately forty persons were asked to serve on it. Because of a sense of urgency, plans, organization and training were begun as soon as possible.

It was quickly realized that, with the possibility of many targets under attack at one time, not much medical supply and equipment could be counted upon until many hours or days after an attack. It would be necessary to train as many individuals as possible and at least one member of each family in first aid. Estimates would have to be made of hospital facilities and of the number of trained professional personnel and auxiliary professional groups that would be available. Lists had to be made regarding the schools, hotels and other structures that could be used as improvised hospitals, the amount of transportation available, and the medical supplies which could be obtained promptly. These were but a few of the many factors which had to be determined well in advance of any major disaster.

The governor appointed the chairman of the California Medical Association Emergency Medical Committee as the chairman of the Governor's Emergency Medical Advisory Committee. This appointment gave the organized medical profession a place in all top-level disaster planning.

As time went by, it was realized that the Governor's Committee was too big. Now there are only

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Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Chairman, Governor's Emergency Medical Advisory Committee; Chairman, California Medical Association Committee on Disaster Medical Care.

eight regular members and seven consulting members representing medicine, dentistry, nursing, public health, pathology, clinical laboratories, American Red Cross, hospital associations, optometry, osteopathy, and veterinary medical associations.

The California Medical Association Disaster Committee is composed of three physicians, all of whom are members of the Governor's Emergency Medical Advisory Committee—one physician is chairman of both committees and the other two physicians are Medical and Health Service Chiefs of Regions I and II, the two largest regions in the state. Recently, Governor Edmund Brown reappointed all three California Medical Association physicians to this committee.

California has an adequate disaster plan. The Civil Defense Operations Plan for this state consists of a basic plan with 24 annexes and provisions of continuity of government. Annex 13-OP is the Medical and Health plan. The State Department of Public Health becomes the Medical and Health Division, California Disaster Office. The Director of the State Department of Public Health becomes the Chief of the Medical and Health Division.

The medical and health services of regions, sectors, operational areas, counties and cities are staffed by public health and volunteer personnel from the medical profession and allied fields. Detailed organization and functions are outlined for each of the regions.

The State Department of Agriculture assists the Medical and Health Service in the detection and identification of chemical and biological agents.

The Department of Mental Hygiene will also assist the Medical and Health Service in medical care.

Private and quasi-governmental health agencies and organizations will be integrated into the Medical and Health Service operations where agreements and understandings have been established with local governments.

During the past nine years, the Disaster Committee has participated in the following:

- Formulating an overall medical policy and organization.
- Preparing casualty estimates for the target areas on the basis of both the 20 kiloton atomic bomb and the 20 megaton thermonuclear bombs.
- Preparing regional annexes and plans for a coordinated medical and health service throughout the state.
- Preparing estimates of costs of medical supplies and equipment.
- Determining the number of first aid stations for the state.
- Determining the kinds and quantity of supplies for the first aid stations.
- Determining the number of first aid stations for each region.
- Preparing requisitions for supplies and correlating them with the operations of the state purchasing division.
- Determining the number and locations of improvised hospitals.
- Keeping Civil Defense and disaster plans flexible. (They were revised after the detonation of the thermonuclear bomb—for example, 75 per cent of all aid stations were relocated so that they would be on the periphery of expected target areas and all Civil Defense emergency hospitals located approximately 25 to 35 miles from the target area wherever possible.)
- Planning and selecting locations for 130 Civil Defense emergency hospitals.
- Initiating and encouraging immunization programs.
- Deciding the kinds of antibiotics to purchase and a system of rotation.
- Helping the California Disaster Office Medical and Health Division prepare numerous training manuals, covering aid stations, treatment of casualties, improvised hospital organization, etc.
- Procuring training units for aid stations and distributing them to various regions.
- Organizing and conducting training courses.

A medical and health survey has been made by the California Disaster Office to determine the capacity for medical care in the event of a major disaster.

The fullest use of paramedical personnel must be made. They will have to carry the major part of the load. Dentists, veterinarians, nurses with training of all types, dietitians, pharmacists, physiotherapists, medical and x-ray technicians, hospital administrators and others in the medical field are included under the heading of paramedical personnel.

It is well known that all preparations for major disasters of all types are costly, but preparation is one of the best possible protections against the loss of the lives of thousands of casualties.

A study made at the request of the Emergency Medical Advisory Committee by the Medical Health Division revealed that if an enemy attack occurs, we will need 443 aid stations in addition to the 683 already provided. When our committee, some time ago, decided upon 683 aid stations, information about the more powerful megaton weapons was not available. A first aid station can handle 600 patients per day and approximately 1,800 in three days.

In an all-out enemy attack it is not realistic to assume that much if any help or medical aid or evacuation of large numbers of casualties will occur in the first week or two.

A total of one hundred thirty Civil Defense emergency 200-bed hospitals have been delivered and stored in this state.

Some 378,000 blood procurement bottles with an equal number of donor and recipient sets at a total cost of $113,210 have been distributed and are available for immediate use.

Fifty sanitation units (water chlorinating units) have been purchased and distributed at a total cost of $35,000.

Large supplies of antibiotics were purchased and these supplies are checked each year for potency. Approximately $25,000 worth of antibiotics are kept in Sacramento and a system of rotation has been worked out so that as this material is used in prison hospitals it is replaced with newer antibiotics as they are developed. This represents a saving in money to the state and insures that a supply of the latest type of antibiotics will always be on hand.

Of the $12,000,000 Civil Defense appropriation by the State Legislature (item 362.1) in 1951, $3,167,000 was for "medical and first aid supplies and equipment . . . provided that $2,000,000 of this amount shall be available only if matched by a like amount from federal grants."

There was considerable pressure exerted on this committee to buy and stockpile large quantities of blood plasma. Several of us on the committee had seen cases of viral hepatitis develop following its use in World War II and we recommended the purchase of only half the amount originally proposed. This decision resulted in the saving of a large amount of money, and time has proved this decision to be a most valuable one.

No matter how much money is available, it takes considerable time to manufacture medical supplies and make them available. It must be expected that for several months after an attack there will not be adequate production of items vital to disaster medical care and for the continuing medical care of the surviving population. For normal consumption, drug stores have supplies on hand for only ten days and many manufacturers have only thirty days' supplies available. Even if the supplies were available, delivery might be impossible in the immediate postattack period.

Since 1951 very little money has been made available for medical and health services for disaster care, and even the small amount budgeted has been largely for the purchase of surplus items for training purposes.

TEST EXERCISES

This committee is most interested in seeing that all hospitals have a disaster plan which is well understood and which has been actually tested at least once each year. The only plan of any value is one that is understood by all key individuals and one that has been thoroughly tested.

Short of having a disaster, there is nothing better to stimulate interest in disaster preparedness and to show up existing defects than a good test exercise.

Three test exercises have been held in the Alameda-Contra Costa area. In the first one, in October, 1956, one hospital participated. A second test, in April, 1957, involved five hospitals. Then in June, 1958, 24 hospitals and 3,000 persons took part in the exercise.

Similar test exercises should be held in strategic areas all over California. With stress placed on preparations for nonmilitary disasters, greater public interest could be aroused by the use of Boy Scouts, high school students and many other representatives of the population for special assignments. Placing enthusiastic persons in key positions will do much to lessen public apathy.

Seldom nowadays do we use the term *Civil Defense*. Instead we speak of medical disaster care or disaster preparedness. Civil Defense excites little interest, but nonmilitary disasters such as floods, earthquakes, plane crashes, fires and train wrecks occur often enough to make the possibility real. The flood in California in December, 1955, was the greatest disaster of its kind that ever occurred in this state. There were 64 deaths attributable to flood conditions, and the financial loss was estimated at $200,000,000 for "direct flood losses" alone by the California Division of Water Resources.

The director of the California Disaster Office, Mr. Harold G. Robinson, has reported that since 1955 the California Disaster Office has obtained financial assistance for local government following natural disaster emergencies totalling $9,420,000:

Floods of 1955-56	$7,463,922
Malibu Fire, 1958	100,000
Floods of 1958	1,859,538

With continued assured growth of California, natural disasters will always be a big problem and we must be prepared for them.

In February of 1960 at the Annual Session of the California Medical Association a scientific session was entirely devoted to disaster medical care. Representatives from the federal, state and local governments as well as paramedical groups participated.

Medical schools are teaching disaster medical care as part of the medical students' education.

Being prepared for disasters will have to be part of our way of life from now on. Self-help and mutual aid form the basic tenets of our planning and organization.

Much remains to be done.

University of California Medical Center, Los Angeles 24.

Fallout Dosage and Monitoring

SIMON KINSMAN, *Ph.D.*, San Francisco

- **At present there are a large number of people capable of conducting the task of surface and area radiation monitoring, including external monitoring of personnel. Once the extent and the intensity of radioactivity in an area is determined, good use of personnel can be made without too much risk. This is fortunate for the medical profession whose personnel can devote their talents to casualty care during or following nuclear warfare. Most individuals who know how to detect and measure the extent of radioactive contamination are also capable of conducting personnel decontamination operations and would do so if necessary. Consequently the spread of contamination can be minimized by adequate decontamination and the medical personnel can treat casualties who are relatively free of external radioactive contamination. The appropriate use of trained manpower and radiation detection equipment which are available in California combined with sufficient rehearsals prior to a nuclear war will greatly reduce any casualty damage due to radioactive fallout.**

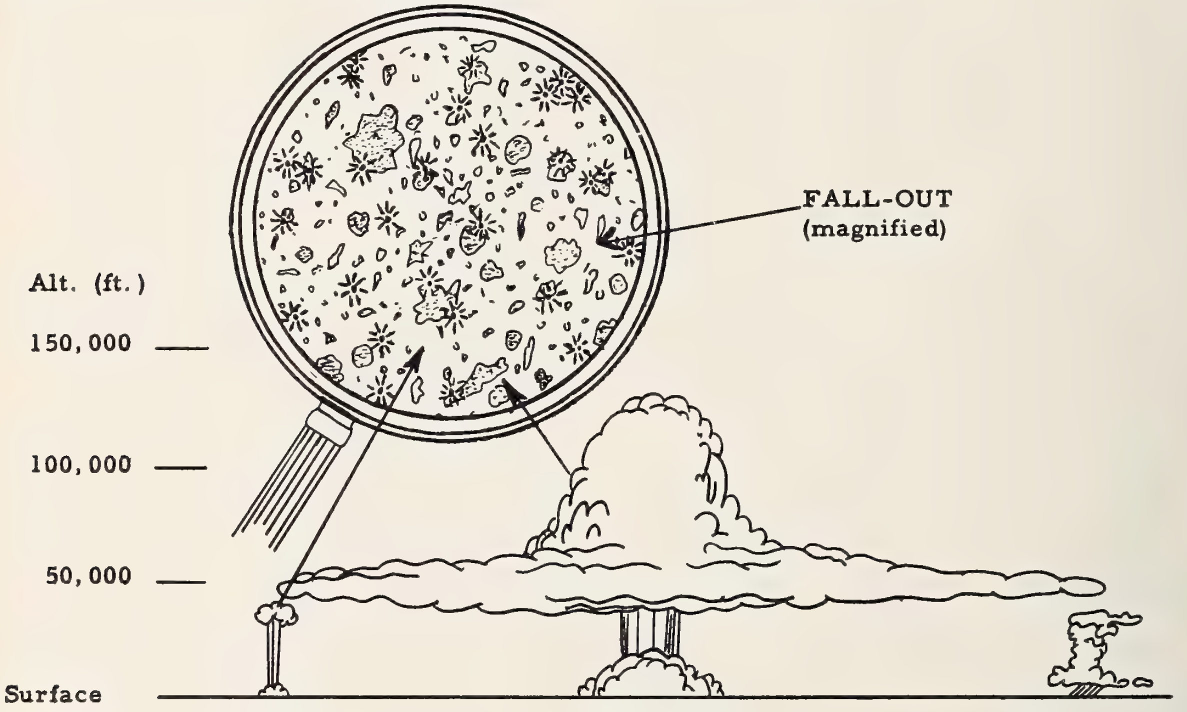
The chances of survival of individuals can be greatly improved with a little knowledge of protection from radioactive contamination and of salvage of food and water.

THE RADIOLOGICAL CONTAMINANTS from the atom bomb are fission products. The hydrogen bomb utilizes the energy from the fission reactions to start a thermonuclear or fusion process which produces helium from hydrogen and likewise releases energy. Since the helium (He^4) is not radioactive, and is a gas, the increase in fallout activity produced by a thermonuclear weapon must come from the fission of the uranium or plutonium that is used as a fuel.

An estimate of the amount of material composing the fission products can be obtained from the data on ordinary A-bombs, namely, that for each 20,000-ton TNT equivalent rating about two pounds of radioactive material is produced in the fission process.[5] A 15-megaton bomb would produce some 1,500 pounds of radioactive material.

FALLOUT

The energy released in an explosion of a nuclear weapon is sufficient to vaporize and heat to incan-



Comparative size of A-bomb mushroom, H-bomb mushroom and ordinary thunderstorm cloud.

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Radiological Health Consultant, Region IX, United States Public Health Service, Department of Health, Education and Welfare.

descence all the fuel (uranium, plutonium and hydrogen bearing material), the fission products, the bomb casing and components, and the radioactive materials produced by neutron bombardment of the medium surrounding the bomb at the time of detonation. This incandescent mass, called the fireball, starts skyward shortly after it is formed, and at the same time becomes diluted with air, dust and dirt from the ground and the space between the ground and point of detonation. The fireball then appears as the frequently described mushroom-shaped atomic cloud, the internal portion of which is still extremely hot, but cooling as it ascends. When the vaporized components of the cloud cool sufficiently they will condense or solidify. This process generally takes place on the unvaporized material such as the dusts which were sucked into the cloud during its ascent. The solid particles, whether they are radioactive or not, will begin to descend as soon as they are swept out of the rapidly rising cloud by the cross winds at various altitudes and as soon as the mushroom-shaped cloud has reached its ultimate height. The precipitation or settling of these radioactive particles is known as fallout. The extent and nature of this fallout will be determined by such factors as altitude of the burst, the height to which the cloud rises, type of medium in which the bomb was detonated (air, liquid or solid) and the meteorological conditions as illustrated on next page.[2]

It is generally stated that the fallout from an air burst constitutes little or no radiological hazard, that the hazard from a subsurface explosion would probably not spread far from ground zero, but the fallout from a surface burst might be dangerous even at some distance from the explosion. Since the fireball produced in the detonation of a hydrogen bomb is several miles in diameter, it is likely that the explosion would be a contaminating burst. In addition the radioactivity released in a nuclear weapon is in proportion to the energy released, and these weapons are now considered to have TNT equivalents of millions of tons (megatons). Consequently the fallout from a surface burst of a weapon of this type would constitute a serious hazard in an area of 7,000 or more square miles.

In estimating and predicting the area affected by fallout, it is necessary to have good meteorological data and to utilize personnel with training and proficiency in meteorology to plot the data and evaluate the results. Two factors that are always considered in calculating the fallout areas are the size of particles formed and the prevailing winds. The large dust particles settle rapidly and are affected for the shortest time by the prevailing winds. The smaller dust particles settle slowly and are spread to greater distances.[5] An important point to remember in the estimation of fallout areas is that the surface wind plays only a small part in the distribution of these particles. Upper level winds often blow in opposite directions to those at lower altitudes.

For all critical target areas, the U. S. Weather Bureau makes twice daily forecasts of the direction of fallout drift and the probable arrival time. It is planned to expand this service to cover all areas of the country. This information provides to local, state, regional and national Civil Defense the data necessary for the construction of fallout plots. Details of the program are described in FCDA Advisory Bulletin No. 188, dated May 25, 1955, and Supplement No. 1, dated August 16, 1955. Instructions are included for constructing fallout plots from the Weather Bureau forecasts.

These fallout predictions are useful for Civil Defense planning, but limitations must be recognized. The present forecasts do not cover all of the country; they apply only to the critical target areas. Since forecasts are released only twice a day, the fallout plots sometimes will be based on wind measurements more than 12 hours old.

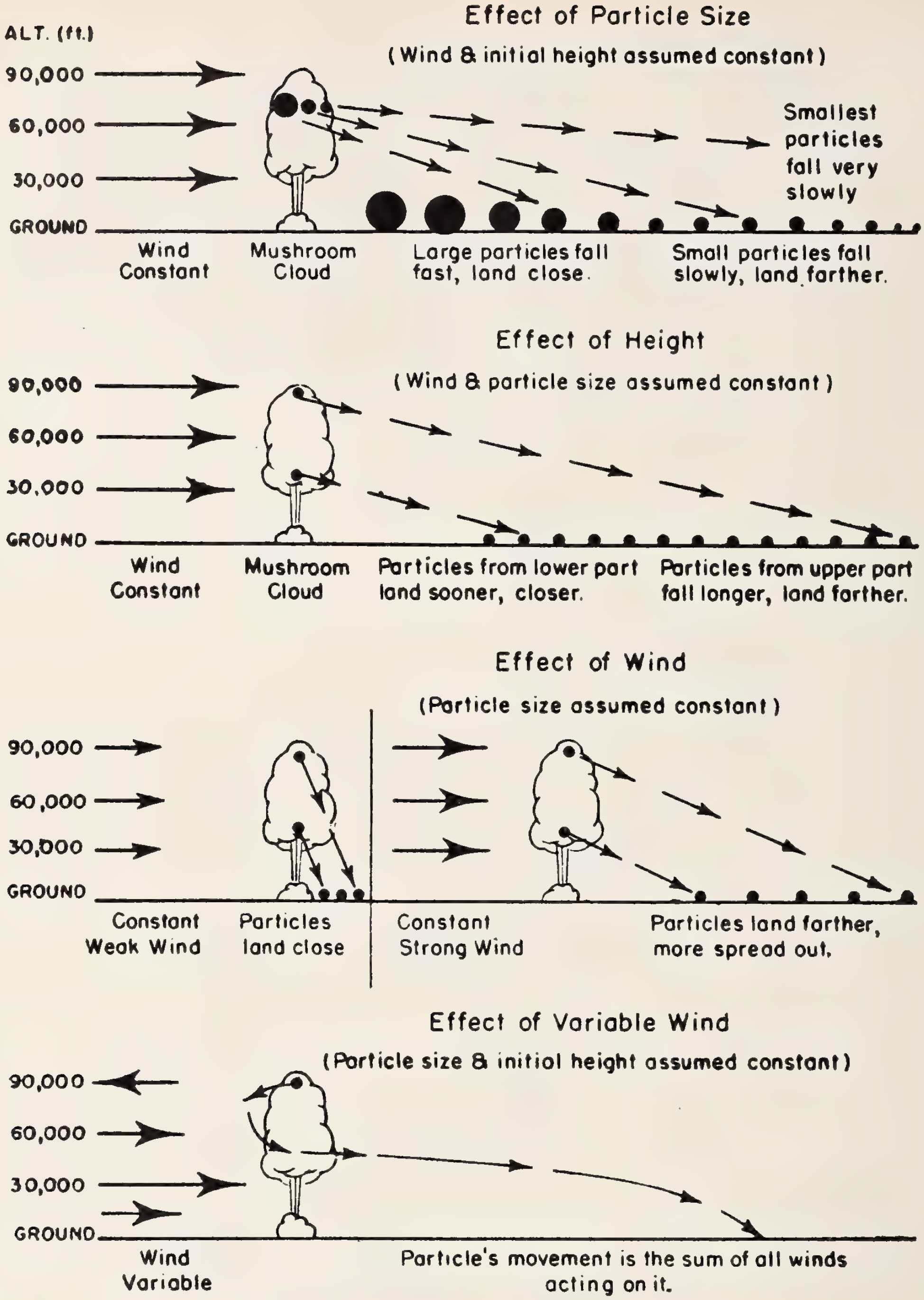
The data as released by the U. S. Weather Bureau will not be sufficient in itself to ascertain the radiation levels in the fallout areas. The H-bomb tests in the Pacific were helpful in providing some information on contamination levels for that particular detonation in that area. The following table gives an estimate of probable contamination from a 15-megaton weapon.[4]

Time (After Burst)	Contaminated Area	Average Intensity (Gamma Radiation per Hour)
1 hour	250 sq. mi.	2500 roentgen
3 hours	1200 sq. mi.	200 roentgen
6 hours	4000 sq. mi.	30 roentgen

If we ever experience fallout contamination from a nuclear weapon the accuracy of the prediction of fallout area will depend upon the accuracy of the weather data at the time and the abilities of our meteorologists. In any event, monitoring will be necessary to determine the contaminated area and the amount of radiation to which people in the area are exposed.

RADIOLOGICAL HAZARD

The half-life of the radioactive materials in the atomic cloud varies from a few seconds and minutes for some species, to hundreds of years for others. The fallout will contain many radioactive species, some of which can be an internal hazard if they are admitted to the body, and all can constitute an external hazard when outside but in the vicinity of the body. With such a wide variety of contaminants present in different amounts and each decaying at



Effect of Particle Size

(Wind & initial height assumed constant)

ALT. (ft.)
90,000
60,000
30,000
GROUND
Smallest particles fall very slowly
Wind Constant
Mushroom Cloud
Large particles fall fast, land close.
Small particles fall slowly, land farther.

Effect of Height

(Wind & particle size assumed constant)

90,000
60,000
30,000
GROUND
Wind Constant
Mushroom Cloud
Particles from lower part land sooner, closer.
Particles from upper part fall longer, land farther.

Effect of Wind

(Particle size assumed constant)

90,000
60,000
30,000
GROUND
Constant Weak Wind
Particles land close
Constant Strong Wind
Particles land farther, more spread out.

Effect of Variable Wind

(Particle size & initial height assumed constant)

90,000
60,000
30,000
GROUND
Wind Variable
Particle's movement is the sum of all winds acting on it.

Factors affecting distribution of radioactive particles.

its own rate, the task of obtaining the desired information on the amount of radiation which a person might receive if he were required to work in the fallout area appears a difficult one. There is, however, an empirical relation between (1) the intensity of radiation in the fallout, (2) the time interval between radiation measurements and, (3) the average decay constant for fission products. This empirical relationship is an exponential or logarithmic one and all expressions of time must be in terms of the same unit, generally in hours.

The relationship between the total body cumulative dose, the intensity of radiation an hour after the explosion (H + 1) and the length of time of exposure also involves a logarithmic solution. Both of the above empirical relationships are incorporated in the nomograph shown on the following page, which can be used as follows:

(1) To obtain the activity or intensity of radiation at any given time, utilize:
   (a) A radiation detection instrument to measure the activity or intensity of radiation from the contaminating fission products (fallout at a known time after the detonation or blast, and
   (b) Columns A, B and D of the nomogram.

(2) The dose for the first hour after the blast is approximately 2.5 times the dose accumulated between H + 1 and H + 2 hours. By using columns B, C and F of the nomogram, the cumulative dose from H + 1 to any other time may be obtained.

(3) The infinity dose (dose for a long or infinite time) is the accumulated dose received by exposure to the effective life of all the fission products, and may be calculated from any desired time after the fallout has occurred by using columns B, C and E as illustrated in the following examples:

PROBLEM	**SOLUTION**
1. The radiation level in a contaminated area has been measured to be 500 milliroentgens per hour (mr/hr) 8 hours after an explosion of an atom bomb. What was the radiation level 1 hour after the explosion?	Place a straightedge connecting 500 mr/hr on column D with 8 hours on column A. Read from the point at which the straightedge crosses column B (6,000 mr/hr).
2. What is the cumulative radiation dose in a contaminated area between H + 1 and H + 8?	Connect 6,000 mr/hr on scale B with 8 hours on scale F. Read from column C, a cumulative exposure of 10,000 mr (10r).
3. What will be the infinity dose in the area following H + 8 hours?	Connect 6,000 mr/hr on scale B with 8 hours on scale E. Read from C, an infinity dose of 20,000 mr (20r).
4. What dose will personnel accumulate who are in the contaminated area between H + 2 and H + 8? Solution of problems of this type require the subtraction of two cumulative dose computations.	Cumulative dose from H + 1 to H + 8 has previously been computed to be 10r. To determine the dose between H + 1 and H + 2, place a straightedge to connect 6,000 mr/hr on scale B, with 2 hours on scale F. Read 4,000 mr (4r) from scale C. The dose from H + 2 to H + 8 is the difference between these two determinations: 10r — 4r = 6r.

MONITORING

As a basis for measures to protect personnel remaining in or likely to enter an area after nuclear detonation, the degree and extent of radiological contamination must be determined. A few haphazard instrument readings will not suffice; a systematic survey is necessary. In general, there are two steps that should be included:

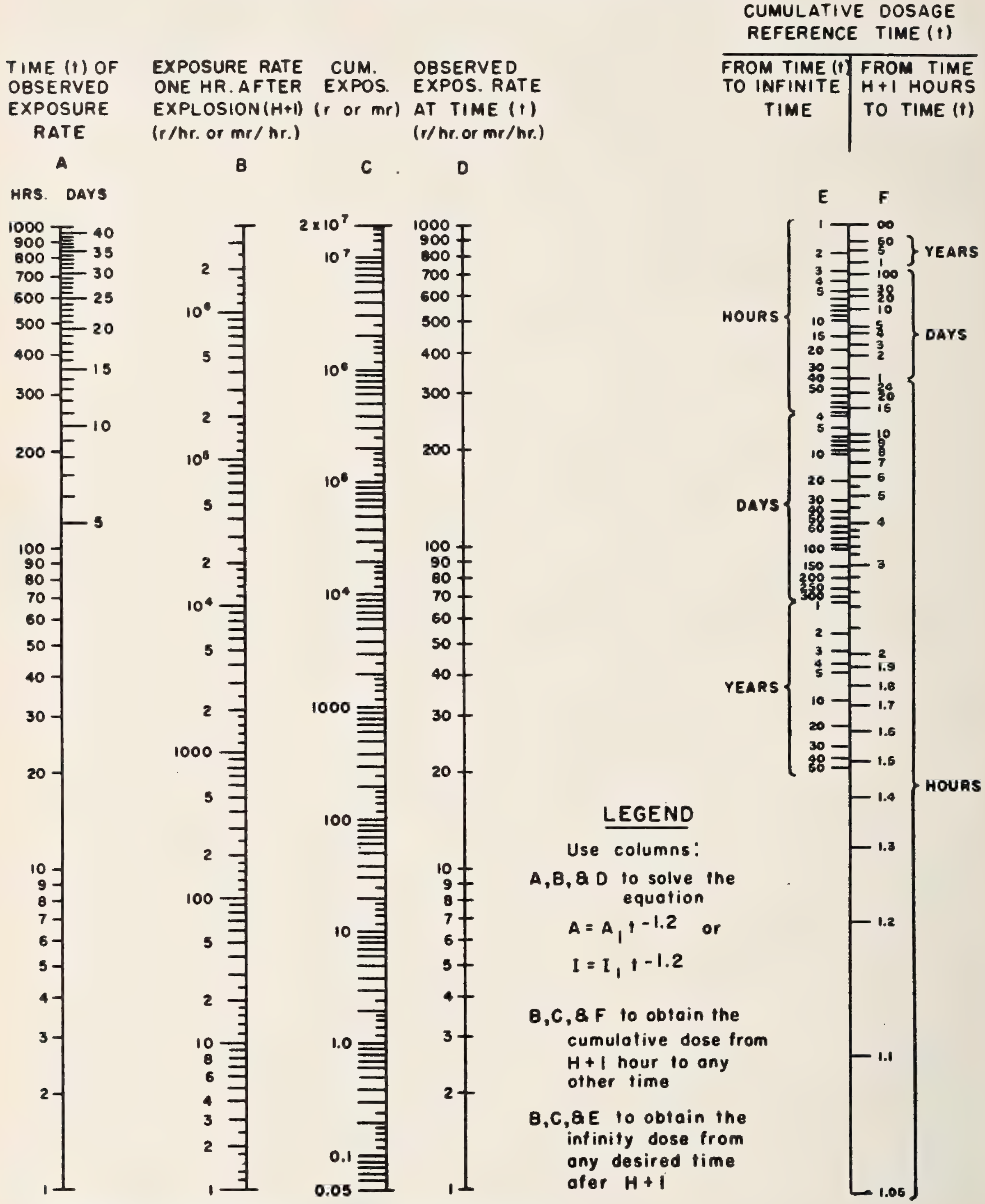
1. The first step, concerned with the gross contamination, is a rapid survey to determine the immediate safety precautions and necessary rescue operations. This survey applies to either land or sea areas and should be made by air monitors and followed by surface monitors. It is apparent, however, that in order to obtain enough data quickly, it will be necessary to have a number of trained monitors to take measurements of radioactivity throughout the area suspected of contamination. These monitors may be anyone designated by the Civil Defense chief in the area. They must be well trained in the use of instruments and in making accurate reports of the observed data. A monitor should also know how to interpret the results of his findings to a degree sufficient to be responsible for his own immediate safety and that of others near him in case he should find himself in a region of great radiological hazard. The instruments to be used by such monitors have been specified by OCDM. However, other portable beta-gamma radiation detecting instruments may be used, if they are available for such operations.

Monitors should be assigned to each unit area on the basis of a previously designated grid system. Following radiological attack, each monitor should proceed to his assigned area and conduct his survey with a high-intensity survey meter, taking frequent readings, until he reaches an area in which radioactivity is above the tolerance level as previously established by the defense organization. He should report his findings to the proper authority promptly and frequently by whatever means of communication is available, preferably two-way radio. If the monitor finds that he is already in an area above tolerance, he should evacuate to an area of lesser activity, warning others to do likewise. If he finds that his entire area is below tolerance, he must stand by within his area and continue monitoring and reporting, unless ordered otherwise.

2. The second step should be a detailed and accurate survey over a considerable time to obtain information on the exact nature, extent and rate of decay of the radioactivity present. This survey may include analyses of contaminated samples by state department or university laboratories and should lead to a prediction of the probable degree of hazard remaining in the area at any specified future time. Such information is vital in determining the extent to which evacuation, decontamination and reentry into the area should be effected.

Assuming that the rapid survey within any given unit area has been completed and that the monitor is still within his area or that he has reentered an area where the intensity has decayed sufficiently to permit at least short-duration operations, the monitor will proceed with the detail survey. This time he may use a more sensitive or lower-intensity survey meter, such as a G-M type, taking readings at more locations and with greater regularity. It is important that he continue to report his results to the proper authority or to the damage control center. If there should be no radiation evidenced except normal background count within the area under survey, monitors must nevertheless make continued

GAMMA RADIATION DOSAGE FROM FISSION PRODUCTS



LEGEND

Use columns:

A, B, & D to solve the equation

$A = A_1 t^{-1.2}$ or

$I = I_1 t^{-1.2}$

B, C, & F to obtain the cumulative dose from H+1 hour to any other time

B, C, & E to obtain the infinity dose from any desired time afer H+1

A = Radioactivity at arbitrary time. A_1 = Radioactivity at any stated time thereafter.
I = Intensity of radiation at arbitrary time. I_1 = Intensity at any stated time thereafter.
t = time interval between A and A_1 or I and I_1. H = Explosion of bomb.

surveys of their entire areas if these lie within the region of possible fallout. This is necessary to detect any later increase of intensity and thereby warn of approaching fallout and possible hazard. Indications of the absence, as well as of the presence, of radioactive contamination are important to the Civil Defense officer who is plotting the overall situation.

During this detailed survey, the monitor should select samples of earth, water, or small exposed objects and transmit them through his Civil Defense Central Office to a radiological laboratory where they may be checked for radioactivity. Laboratory analysis should also lead to certain conclusions as to the types of materials constituting the contamination. This information would prove useful in selecting suitable decontamination procedures to be employed and, together with carefully recorded intensity readings taken at regular intervals at a few points specified by the defense officer, will form the basis for calculating the time that must elapse before a radiologically hazardous area becomes safe for occupation.

In summarizing survey operations, it cannot be too strongly emphasized that the rapid, yet accurate, reporting, recording and charting of data obtained are vital necessities if correct conclusions are to be drawn by the Civil Defense officer. Upon these conclusions, the commanding officer must base his decisions for such subsequent action as rescue, evacuation, decontamination and rehabilitation. It should also be remembered that monitors and other personnel required to work in possibly hazardous areas should be provided with suitable protective clothing and equipment and with dosimeters to provide a record of the cumulative dosage received by any one individual. This record should be used as a basis for shifting personnel to duties in less hazardous areas when they have been overexposed or appear to be in immediate danger of accumulating too great a total exposure to radiation.

In estimating the probable decrease of the radiation hazard with time, the decay rate of the ashes of the nuclear weapon can be approximated by considering that for every seven-fold increase in the age of fission products, there will be a ten-fold reduction in the radioactivity or intensity of radiation as illustrated below:

Contamination in Curies of Radioactive Material	Time After Formation of Fission Products	Radiation Intensity from Fission Products (Roentgens per Hour)
1,000	1 hour	10,000
100	7 hours	1,000
10	49 hours (2 days)	100
1	14 days (2 weeks)	10
0.1	14 weeks (3 months)	1

Any area that is still dangerous three months after the detonation will remain so for a long time. Unlike airbursts, surface and subsurface bursts present a hazard to all persons entering the area for some time after the explosion. The degree of the hazard will depend on the time elapsed before reentry. The civil radiological defense officer must solve this problem, either through the use of a plot, by the multiple-decay equation, by special sliderules, or by nomograms (page 76).

Some kind of radiological survey is desirable regardless of the type of burst. A natural rainfall within an hour after the burst could greatly affect the area in which it fell. Raindrops passing through the contaminated air might carry down a significant amount of contamination. Lung protection must also be considered if it is intended to operate in a contaminated area while radioactive dust might still be suspended in the air the monitors breathe.

SALVAGE OF FOOD AND WATER

It should be borne in mind that radiation is more easily dealt with when it is outside than it is when within the body. Decontamination of the skin is far easier than decontamination of the lungs, liver or bones.

All food in the damaged area may be dangerous. The food may contain some induced radioactivity, but probably not in hazardous amounts. The largest source of contamination is fallout. Radioactive dusts may be deposited on the food and water left uncovered. The following are good rules of precaution:

Isolate all unpackaged foods that were lying where dust from ground bursts or mist from underwater bursts might have settled on them. Before opening canned or bottled goods, wash the outside of the containers thoroughly. That will remove most of the pollution that may have deposited on them. Also, be sure that all cooking utensils and tableware are scrubbed clean in order to remove any invisible, radioactive dusts. Food and utensils that were in closed drawers or tight cupboards which prevented the access of fallout will be all right.

Be careful of drinking water after atomic explosions. There is little or no chance that water actually inside household pipes at the time of attack will be made radioactive. If a little is drawn off right after the burst and placed in clean containers with covers, it should tide you over the immediate postraid period.

But even if the water continues running, don't keep on using tap water for drinking purposes unless you have received official information that the city system is safe. This is not only because of radioactivity, but because of other dangers like typhoid that can come from damaged water systems. If you have to use city water before you get official infor-

Supportable Risks of Beta-Gamma Activity in Water

Period Over Which Water Is to Be Consumed	Preferable Risk		Acceptable Risk	
	Curies per Cubic Cm.	Disintegrations per Min. per Cc.	Curies per Cubic Cm.	Disintegrations per Min. per Cc.
10 days	3.5×10^{-9}	7.7×10^{3}	$9. \times 10^{-8}$	$2. \times 10^{5}$
One month	1.1×10^{-9}	2.6×10^{3}	$3. \times 10^{-8}$	$7. \times 10^{4}$

mation, boil it. Boiling won't remove radioactivity, but the chances that your water supply will be radioactive are pretty slim.

The figures in the table at the top of the page summarize the supportable risks for beta-gamma activity in food and water immediately following a contaminating atomic explosion.[1]

These levels of contamination are detectable with ordinary beta-gamma survey instruments.

GENERAL INFORMATION[3]

All radiation is damaging and should be avoided wherever possible. In cases of disaster, radiation tolerances will be changed from peacetime to emergency tolerances; and the amount of exposure to radiation will have to be weighed against the benefits to be gained. If, however, the rules, regulations and directions which have been published by your Civil Defense organizations and those being sent out by radio during the disaster are complied with, the chances of survival will be greatly increased.

Alpha, beta and gamma radiation will not cause your foods, the water or yourself to become radioactive when you are exposed to them. Neutron type radiation may induce some radioactivity; however, everything within the neutron range will probably be damaged beyond repair and should be forgone.

The handling of people or objects that are contaminated with radioactive materials should be no different than handling of people or objects that are contaminated with any kind of dust that would be detrimental if taken into your system. You will not become radioactive if you handle people who have been killed or damaged by radiation. Decontamination is a modern word for scrubbing with soap and water. However, since they cannot be destroyed, radioactive material that is washed off the walls of buildings or off people should be disposed of in such a way that they can never find their way into the human system.

Water from deep wells which are covered and undamaged will be safe to drink, provided, of course, it was satisfactory before the disaster. If the water supply is contaminated in the watershed area but the water trickles through several feet of sand and dirt before going to your water purification plant, most of the radioactive materials will be removed. Household water softeners are also efficient in removing radioactive materials from water.

In regard to shelter and shielding from radiation resulting from the radioactivity in the fallout area, as long as we can prevent internal contamination we only need to consider the gamma radiation.

CONCLUSION

Radiological defense is one part of a comprehensive integrated defense system and requires a host of technical personnel for its success. In order to properly integrate it with the other phases of the defense planning, training, and mutual aid between individuals, communities, states and countries cannot be overemphasized. The survival of each individual depends a lot on how he conducts himself before, during, and after a disaster. Training is like an insurance policy in this respect, and the premiums should always be paid for ahead of time. We cannot take the risk of allowing our training program to lapse.

Department of Health, Education and Welfare, U.S.P.H.S., Room 447, Federal Office Building, San Francisco 2.

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Disaster Medical Care and Shelter

The Federal Program

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• The role of the physician in event of natural disaster or overwhelming (perhaps nuclear) attack by an enemy is:

To assist the layman in preparing to meet his own health needs in a disaster situation until organized health services can reach him.

To prepare and plan for the provision of organized medical care when conditions permit.

To extend his own capability to render medical care outside his normal specialty.

To assist in the training of allied and professional health workers and laymen for specific mobilization assignments in health services.

EARLY THIS YEAR, President Eisenhower met with California's Governor Brown and four other state governors who comprise the membership of the Special Committee on Civil Defense of the Governors' Conference. This meeting with the top officials of the Federal Government, held at the initiative of this committee of governors, devoted an entire day to consideration of the need for and the means of providing fallout shelter for the people of the United States. The Secretary of State, the chairman of the Joint Chiefs of Staff, the chairman of the Atomic Energy Commission, the director of the Central Intelligence Agency and other Cabinet officers and agency heads by their participation in this conference indicated the importance not only of shelter but of the entire Civil Defense effort to our national defense.

The Secretary of State put it succinctly: "Our relations with the Communist world since World War II have made clear beyond a doubt that our search for equitable solutions and for a meaningful peace must be predicated upon a strong defense posture of our own. We must assume that weakness on our part, or merely the supposition on the other side that we are neglecting our military defenses, serves neither the cause of freedom nor justice. . . . A vital part of our military strength for peace must be an effective Civil Defense program which, in conjunction with our retaliatory capacity, creates a strong deterrent to possible enemy attack upon the United States. If, despite our earnest efforts at the negotiating table and our defense preparations, we should nevertheless be subjected to nuclear attack, Civil Defense and measures for fallout protection offer the most practicable and feasible means of saving the greatest number of lives. . . . Numerous studies have shown that such a program would give a substantial portion of our population an excellent chance of surviving and hence provide us the opportunity to continue the fight successfully. A capacity to retaliate will [thus] be reinforced by an effective capacity to survive. And only thus can our defense posture serve as a convincing deterrent. . . . There is evidence that the U.S.S.R. is stepping up its civil defense program. Combined with a substantial program for air defense, it provides Soviet negotiators with a good deal of assurance that their homeland will be able to withstand attack. A similar assurance with respect to our own country would clearly strengthen our defensive position. . . .

"What I have said not only has serious implications for our own military and diplomatic posture; it applies to our NATO partners as well. We count on our NATO allies to remain firm in the face of any aggressive threats. An effective program of fallout protection will provide further support for their determination to do so. But if we expect them to take further measures to protect their own populations, we should not lag behind. . . . Any additional measures which we can take to minimize the fallout danger will reinforce our country's defense posture, and thereby, its political and negotiating strength."

I have quoted so extensively from Secretary Herter's remarks because he stated explicitly what our military and political leaders, and the President, know so well—Civil Defense is as vital to our national defense and the protection of our country and our institutions as is, for example, the deterrent capability of the Strategic Air Command.

There continues to be much discussing and deploring of the so-called "apathy" of the American people. Aside from the fact that what is called apathy is really ignorance, some people express a feeling of hopeless fatalism in the face of the enormous potential of nuclear destruction, and fall back on a psychological rejection of the whole melancholy business. A thoughtful friend of mine, in the course

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Director of Health Services, Office of Civil Defense and Mobilization.

of a discussion the other day of some of the newer knowledge of radiation effects, said, "I think I don't want to be around when it happens." Who does! But we need to stress and stress again that the crucial urgency of Civil Defense preparedness is to insure that "it doesn't happen." Civil Defense is more than a desperate last ditch effort for survival; it is an opportunity for every community, every citizen, to take positive patriotic action to strengthen the defense of his home and his country.

And I can say that fallout shelter for the population of the country is the single measure that would have the greatest effect in saving lives of the survivors of a nuclear attack. This may come as a surprise to you physicians, but it is true.

No less an authority than Congress's Joint Committee on Atomic Energy, following its hearings last summer on the biological and environmental effects of nuclear war, reported: "Probably the most significant finding presented to the Subcommittee was that Civil Defense preparedness could reduce the fatalities of the assumed attack on the United States from approximately 25 per cent of the population to about 3 per cent."

Announced on May 7, 1958, the National Shelter Policy has met with reasonable public acceptance.

The Federal Government's role has included the following action elements:

1. *Education*, with emphasis on facts about fallout and steps which can be taken to minimize its effects;

2. *Survey* of existing shelter, on a sampling basis, to demonstrate the value of existing structures in providing fallout protection;

3. *Research*, to show how fallout shelters can be incorporated in existing, as well as new buildings;

4. *Prototype* design and construction—a program of both research and demonstration;

5. *Leadership* and example, by incorporating fallout shelters in appropriate new federal buildings; and

6. *Incorporation* of shelters in existing federal buildings (not yet funded).

The Federal Government is broadly pointing the way. Next year's budget includes $11.5 million for incorporation of fallout shelters in all new suitable civilian federal construction. The Federal Housing Administration and the Veterans Administration have revised their loan and loan insurance programs to include home shelters. The Public Health Service has made fallout shelter in hospitals eligible for grants under the Hill-Burton program.

In addition to the extensive work on design and techniques of providing shelter, both in the home and in large buildings and industry, the government is providing funds for the construction of prototype shelters. Under this program, one 50-person community shelter will be constructed in Los Angeles and another in the San Francisco Bay area, a 100-person community shelter at Martinez in Contra Costa County, and a family shelter at Santa Rosa. Also, a $200,000 Office of Civil Defense Mobilization (OCDM) shelter survey to determine and improve existing shelter potential will begin shortly in Los Angeles.

Home builders in various parts of the country, notably Denver, are constructing and selling homes with fallout protection built into, let us say, a recreation room. This increasing momentum, sparked by state action through the activities of the Governors' Conference which I have already mentioned, as well as by Federal Government action, is gratifying. Interpreting to the public the need for fallout shelter is a particularly appropriate role for you physicians, because of your natural place as community leaders.

But this is not your only role, even if shelter does have the greatest single life-saving potential. The saving of many lives and maintaining or restoring the health of the survivors of a nuclear attack will depend upon the advance preparation—organizing, training, practicing—that physicians and other members of the health community have made. There are good beginnings. Our national planning base has been firmly established with the promulgation by President Eisenhower in October, 1958, of the National Plan for Civil Defense and Defense Mobilization. The specialized annexes to the plan are nearing completion; the National Health Plan, Annex 18, has just been released. The American Medical Association's monumental report on National Emergency Medical Service, prepared under contract with OCDM, has been made available in quantity in condensed, highly usable form. The Public Health Service, under delegation from OCDM, is well under way with its program to develop plans, organization and training where Civil Defense readiness has to be developed—the individual community.

I should like therefore to describe the public Health Service program, as recently set forth by Dr. Carruth J. Wagner, Chief of its Division of Health Mobilization, at a meeting of the Committee on Disaster Medicine of the American Medical Association.

The immediacy and magnitude of the medical care and public health requirements are the basic problems created by any attack situation. Almost instantaneously, millions of casualties are in need of treatment. Not only is there a gross disparity between the available health resources—that is, manpower, supplies and facilities—and the medical patient load, but there is a corresponding disparity in all the supporting services, such as transportation, fire and rescue, communications, etc. Finally, the radiological fallout in many areas will delay or prevent any organized medical activity for days or weeks. In short, we not only have inadequate numbers of physicians and amounts of supplies, equipment and facilities, but we lack the ability to relate even these limited resources to the patients in many cases because of fallout.

Our first role as physicians, then, is to make it possible for these patients to treat themselves—meet their own health needs—until local conditions permit us to treat them.

The American Medical Association recognized this problem and is collaborating in a self-help research project the Public Health Service is conducting under contract with OCDM. This will consist of a standardized procedures manual related to a standardized medical kit for use by the layman in self, family and neighbor care. In addition to general medical care, it will emphasize hygiene and sanitation, simple methods to be used in the treatment of shock, burns, fractures and hemorrhages, as well as simplified nursing techniques. All these necessary efforts have the purpose of preserving life until the physician can catch up with the patient load.

Once the methods to be used and the medical kit contents are agreed upon, the physician must take an active aggressive role in teaching the laymen to use them. We at the federal level can provide assistance to help the physician in this training responsibility. The Public Health Service can develop and provide training aids, it can support the assignment of personnel to the states and organizations within the limits of appropriations, and it can make its inactive reserve corps available for use at the local level.

The second role of the physician is to prepare for the activation of organized medical care as soon as radiation decays enough to permit personnel to work without too much risk. This role must be assumed now. The physician must actively participate and must provide the leadership necessary to the development of effective medical survival plans in every state and local community. A plan is worthless unless it is related to the resources available and the anticipated requirements for these resources. This means that every physician must have a mobilization assignment. He must know the command channel within the state and local community, and he must be fully prepared to accept his assigned role when the plan is activated.

The plan that he will put into effect must therefore be his plan. It won't be unless he actively participates in its development, revision and maintenance. He must contribute his expert knowledge and experience in determining how limited supplies and equipment are to be used; what treatment techniques are to be practiced in the management of such conditions as burns, fractures and radiation injury; how rescue and transportation of the injured are to be carried out; he must participate in the training and development of teams of laymen and allied professional health workers who will have specific mobilization assignments in his community; he must participate with the state and local Civil Defense directors in solving the administrative problems inherent in any Civil Defense plan; finally, he must extend his own capability to engage in medical care and preventive health activities outside his normal specialty and daily practice. Every physician must be prepared to perform emergency surgical procedures, give an anesthetic, set up an emergency water system, institute communicable disease control measures, advise as to vector control, emergency sanitation and sewage disposal, and all other aspects of personal and community health services.

The government is prepared to assist the physician with many of these responsibilities. Through the assignment of personnel to each regional office and ultimately to each state, the Public Health Service hopes to develop training programs for the physician and allied health worker which will provide them with the methods and training aids they will need to do the job in the local community. The Public Health Service expects to make maximum use of its inactive reserve corps by giving them mobilization assignments and training in the communities where they reside and carry on their normal activities.

I have discussed the significance of Civil Defense preparedness and specifically fallout shelter to our national defense, and the responsibility of physicians as leaders in their communities to prepare themselves, their colleagues in the allied professions and the lay public to meet the survival health needs of themselves and their neighbors.

I want now in closing to urge you to join with us in carrying forward the program for personal survival which we are trying to impress on every American through every medium. The safety of Americans would depend entirely on these five fundamentals—which every citizen should know and take action on:

1. Warning signals and what they mean.
2. Your community plan for emergency action.
3. Protection from radioactive fallout.
4. First aid and home emergency preparedness.
5. Use of Conelrad—640 or 1240 on your radio —for official directions.

If we will assume our leadership responsibility as citizens and as physicians, we will do our part to keep the nation strong and to maintain the peace.

Director of Health Services, Office of Civil and Defense Mobilization, Washington 25, D. C.

Bacterial and Chemical Warfare

The Current Status

CECIL H. COGGINS, M.D., Sacramento

• For fourteen years public attention has been focused so sharply on atomic weapons as to lose sight of other, less spectacular but equally significant advances in the art of warfare.

In the shadows cast by brilliant research in nuclear physics are hidden startling advances in the field of chemical and biological weapons. These weapons, as now developed, are not only capable of producing mass casualties quite comparable with those of atomic bombs, but they also possess certain advantages which may make them the weapons of choice for an unscrupulous enemy.

If war should come, it is the medical profession which will have the sole responsibility for protecting the citizens of California against these weapons, and we can therefore delay no longer in acquainting ourselves with their potentialities and characteristics.

In this task, we are working under two serious handicaps. The first is that our classical medical training affords little appreciation of the real danger, and the second is the cloak of secrecy surrounding the entire subject.

For the past 14 years we have become so engrossed in the atomic bomb that we have lost sight of other advances in the art of warfare. We have forgotten that, while the physical scientists have been producing increasingly destructive weapons, the biologists and chemists have been equally busy. The result is that today we are faced with the possibility of war in which not one, but three terrible weapons may be used. Each one of these weapons is capable of producing mass casualties on a scale far beyond our previous experience and also beyond our present capacity to provide medical care.

While the destructive power of nuclear fission has become common knowledge, the real potentialities of biological and chemical warfare remain widely unknown. Unfortunately this is true, even among the medical profession, upon whose shoulders must inevitably fall the main burden of defense. This dangerous situation, in which we are expected to protect the public against weapons which are unknown to us, cannot be allowed to continue. We must become informed of the facts.

We were not taught in medical school how diseases can be deliberately produced in man nor how the atmosphere may be rendered lethally poisonous. Yet today, somewhat paradoxically, our national security demands that we know a great deal more about biological and chemical warfare than was previously thought fit for our ears.

CHEMICAL WARFARE

What are the facts about chemical warfare? In modern times war gases were first used by the German army against the Allies in 1915. We quickly retaliated; and before the war had ended, chlorine, phosgene, chlorpicrin, mustard and the arsenicals were in general use. Although these early gases were crude and the methods of delivery primitive, they nevertheless caused 1,300,000 casualties and, in doing so, proved to be five times as efficient as either shrapnel or high explosive shells.[3] This was a clear warning of things to come, but forty years have now passed, and each year has been marked by notable advances in chemistry.

After World War I a steady stream of new chemicals came from the laboratories, passed through the stages of research, development and large scale production and finally found a place in military stockpiles. Of these, distilled mustard, the nitrogen mustard series and Lewisite each boasted of a killing power twice as great as phosgene. In 1920, when they learned about Lewisite, the public wishfully concluded that war had at last become too frightful ever to occur again.

Equally important was the constant improvement in methods of delivery. The old fashioned candles, projectors and land mines gave way to new chemical artillery shells, grenades, mortar shells, aerial bombs, airplane spray tanks and finally to rockets. Nearly every projectile in the armaments of the world was adapted to carry chemicals as readily as explosives. It is an historical fact, and one of the most curious in all history, that World War II was fought to its bloody end by military forces, all of whom were afraid to use the chemical weapons in their possession.

But they were not forgotten. Even while fighting with conventional arms, the Germans developed the

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series of organophosphates now known as the nerve gases Tabun (GA), Sarin (GB) and Soman (GD). Twenty times more toxic than hydrogen cyanide, these gases were so deadly that they frightened Hitler. They had the power to cause casualties before they could be detected by the human senses; they were lethal after less than a minute of exposure and their liquid droplets quickly penetrated the skin.[3]

In the body, nerve gases react with cholinesterase irreversibly, thus permitting the accumulation of acetylcholine and, consequently, the continuous uncontrolled stimuation of the parasympathetic nervous system. The resulting spasmodic muscular contractions cause dimness of vision, respiratory difficulty, salivation, involuntary elimination and convulsions ending in death.

It is therefore easy to understand why, having captured the German Tabun plant intact, the Russians triumphantly moved it home to Russia, together with the top ranking German chemists and technicians. As a result, Tabun is now the standard Russian nerve gas and the present Soviet stockpile is estimated at more than 50,000 tons. To understand what this means, we need only note that this quantity is quite sufficient, under the usual conditions of gas dispersal, to wipe out the population of a thousand cities the size of San Francisco.

What have we done to meet this threat? Although the official United States policy has always been that we will not resort to lethal gas unless the enemy uses it first, we have tried to develop a retaliatory capability. Our standard nerve gas is Sarin (GB) and we built a plant at Rocky Mountain Arsenal in Denver for large scale production. However, this plant has since been shut down, partly because of complaints from Denver residents against the proximity of so deadly a munition. To replace the Denver facility, the Chemical Corps has now begun converting an Atomic Energy Commission plant at Newport, Indiana, for the manufacture of nerve gas—at a cost of 13.5 million dollars.

Whether we can overtake the Russian lead is now problematical. The chief of army research and development, Lieutenant-General Arthur Trudeau, admits that we are lagging behind and that we do not now have a counter-offensive capability.

The nerve gases are now standard equipment, but they are already twenty years old and soon they will be joined by more modern and even more deadly chemicals. Today there are, in advanced stages of development, not only war gases of much higher toxicity, but also an entirely new category of chemical weapons designed, not to kill, but to incapacitate. These weapons fall into two groups: Those which produce temporary physical disability such as blindness, paralysis or deafness; and those which cause temporary mental aberration. The great strategic advantage offered by gases that are capable of liberating captured cities while, at the same time, sparing the lives of friendly civilian populations, has given new impetus to chemical warfare research on both sides of the Iron Curtain.

One of the most promising of the new psychochemicals is lysergic acid diethylamide, derived from the ergot fungus. Another is mescaline from the peyote cactus. A third is psilocybin, found in the vision-inducing "divine mushroom" of Mexico.

Preparations of these and other agents are available either as powders or liquids. The liquids can be sprayed into the air to form aerosols which spread across the ground like a fog. Physiological effects are the same whether the new substances are breathed, swallowed or injected parenterally. They variously produce hallucinations, depression, apathy or senseless elation lasting from 12 to 24 hours. The ability to integrate time and distance is lost. The aviator cannot fly a plane and the soldier cannot aim a gun.

These new agents, called by the soldiers "loony gases," have already been tested on a large number of human volunteers. Troops exposed to one of them were not even conscious of their abnormal condition, which was so changed that they were unable to follow simple commands or to perform normal tasks with acceptable accuracy. Only an outsider, not exposed and observing them, could recognize their behavior as eccentric and erratic.[3]

The Russians are well aware of the possibilities inherent in the psychochemicals, and they will certainly be redoubling their efforts to be first in the field with fully operational munitions. Soviet Major General Yu V. Drugov, of the military medical service of the Red army, recently stated, "Special interest attaches to the so-called psychic poisons mescaline, methedrine and lysergic acid derivatives which are now used for the simulation of mental disease."[3]

Such cautious statements do not reveal the full extent of Russian readiness to wage chemical war. Their total military forces number over 8 million men in more than 400 divisions. Each division has a unit devoted to chemical warfare, with chemical troops assigned to all echelons down to the battalion level. Their chemical weapons are modern and effective, and so is their protective equipment. Their stock of war chemicals is enormous, comprising fully 15 per cent of their total military munitions.

The entire population of the Soviet Union is deadly serious about chemical warfare. Their civil defense organization, DOSAAF, requires 22 hours of instruction, plus practical exercises, for all adults between the ages of 16 and 60. Protective masks are sold at government stores throughout the country. Thirty million Russians have completed their training and now wear the qualification medal. For more details on Soviet preparedness, I refer you to House Report 300 of the 86th Congress, filed by the Committee on Government Operations.[1]

BIOLOGICAL WARFARE

Let us briefly consider biological warfare. This is defined as the intentional use of living organisms, or their toxic products, to cause death, disability or damage to man, his domestic animals or crops.

In learning the truth about biological war, the civilian physician labors under very serious difficulties. Up to the present, he has not been permitted to share the knowledge which his military colleagues have learned in secret. At the same time, his habits of thinking, moral convictions and humanitarian instincts all combine to produce in his mind a strong antipathy for the subject. This antipathy commonly expresses itself in indifference or disbelief.

It must be clear, however, that if we are to defend against biological agents, we must know their capabilities. This has been the underlying purpose of the intensive program of biological warfare research which has been carried out in this country for the past 17 years. Under the Army Chemical Corps, research and development is centered in the permanent laboratories at Fort Detrick, Maryland, but collateral investigation has been done in many other laboratories by hundreds of our leading bacteriologists. Their laboratory findings have been tested by field trials under a great variety of conditions. The results leave little doubt of the enormous potentialities of disease when used as a weapon of war.

However, in order to appreciate the power of these weapons, one must first understand how they will be used. Perhaps the most effective method of biological attack is by means of an aerosol. Today, aerosols can be delivered to any point on the earth's surface by generators incorporated into aerial bombs, airplane spray tanks, submarine mines and guided missiles. These generators consist basically, of containers of highly concentrated slurry of bacteria, viruses or toxins, fitted with fog nozzles, from which the contents are sprayed into the air under pressure to form a fine mist. Spreading rapidly downwind, the mist quickly becomes invisible. Under neutral or inversion conditions, 50 gallons of slurry is capable of blanketing an area of 60 or more square miles with a high concentration of infectious particulates.[2]

Trials have repeatedly shown that the cloud penetrates every building, even when not assisted by air circulation systems. The smaller particles diffuse through structures in much the same manner as a gas and many secondary effects occur, such as the widespread contamination of kitchens, restaurants, food stores and hospitals.[2]

If, at this very moment, such a cloud were released over Los Angeles, we would have no choice, if we continued to breathe, but to take into our lungs large numbers of virulent organisms. It is obvious that the consequences of such an attack would not be influenced in any way by the high standards of our Public Health Services, but instead would depend entirely upon the enemy's choice of agent, the dose inhaled and our own individual resistance to the infection.

In the process of verifying the feasibility of such attacks, a great number of research problems have been encountered. They have had to do with the selection of the proper agent for the immediate effect desired; the large-scale production, storage and mechanical delivery of high concentrations of agent; the protection of living agents against unfavorable meteorological conditions during delivery, and finally, the assurance that a sufficient number of particulates of the optimum size can be successfully lodged in the alveoli of the lungs.

We have found none of the problems to be insuperable and it must be assumed that the Russians, who have been doing such research six years longer than we, have come to the same conclusions. Indeed, in a lecture given three years ago, Colonel Adam Milkovich of the Moscow Institute stated, "In a practical sense, the question of the possibility of the use of biological warfare weapons in future wars is not considered today a subject open to debate, for it is known that an enemy can successfully attack human beings, and even animals and plants, with biological agents." And he added, "From results of comparative studies of the losses of life from conventional weapons, war poisons and atomic energy on one side, and losses from biological weapons on the other, it is believed today that a biological war would have the greatest effect of all."[4]

Let us consider what agents an enemy might use in such a war. His choice would be influenced by a number of factors. Among these are: The effect desired, whether early death or disabling illness; the incubation period; prevailing weather conditions; target population susceptibility; persistence of contamination and the possibility of retroactivity. Regardless of prevailing conditions, from his wide spectrum of available agents, an aggressor should be able to select several which would meet his requirements.

Among the bacterial diseases, anthrax, plague or glanders would be expected to produce a very high mortality, while brucellosis, tularemia and bacillary dysentery would disable for a considerable period. The rickettsiae would offer typhus for high mortality, with Q fever and Rocky Mountain spotted fever able to seriously obstruct defensive efforts. Similarly, the viruses of psittacosis, equine encephalitis, influenza and even variola could reasonably be expected to override existing immunities to harass and hamper the defense.[3]

In visualizing the many possibilities, we must constantly keep in mind that we are not talking about these diseases as they naturally occur. On the contrary, we are describing the military exploitation of massive amounts of highly infectious agents, introduced through unusual portals of entry.

Many agents are much more toxic or infectious when they enter the lungs than by the natural portal. The alveolar bed is highly susceptible to infection—entrance to the alveoli amounts almost to intratissue inoculation. Botulinal toxin, for example, is several thousand times more toxic by this route than when it is swallowed. Tests on human volunteers show that the median infective dose for man in Coxiella-burnetti aerosols is one billionth of a gram of embryonated egg material.[2] The high mortality of primary plague pneumonia is well known and a number of other organisms are in the same category.

Although the diagnostic problems presented by the atypical diseases resulting from aerosols may prove to be difficult, nevertheless it is we who will be called upon to solve them.

DEFENSE

I do not wish to leave you with the impression that defense is impossible. On the contrary, defense against both biological and chemical weapons is both feasible and practicable by means which are known and which need only to be put into operation.

Our national government, through the Office of Civil Defense Mobilization, is now initiating a public information program dealing with chemical and biological weapons. Defensive measures to be taken are outlined in the recently issued National Biological and Chemical Warfare Defense Plan (Annex 24) to the National Plan for Civil Defense and Defense Mobilization. Biological and Chemical Warfare defense equipment is being distributed to federal, state and local agencies. One month ago, California was allotted 320 chemical protective equipment sets, including 2,560 gas masks, for training purposes. Plans call for a civilian gas mask to be placed on the market this year.

It is the local governments, however, who have the responsibility for education and training and for perfecting their Civil Defense organizations. As citizens, we are part of our community Civil Defense effort, and, as physicians, we are responsible for the medical aspects of our Civil Defense. With greater awareness of these responsibilities and with the active participation of every doctor, the job will be done.

Medical and Health Division, State of California Disaster Office, P. O. Box 110, Sacramento 1.

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Films for C.M.A. Annual Session Film Symposia Requested

The previously successful film symposia presented during the California Medical Association annual sessions will be repeated in 1961, April 30 to May 1.

Daytime symposia, each one to center around one specialty, are now being planned for the physician. General programs for doctors, their wives, nurses and ancillary personnel will be presented during the evenings.

There will be a moderator and outstanding physicians, preferably authors, as discussants on each symposium.

Authors desiring to show their films should notify Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

Deadline: December 1, 1960.

Disaster Care for 15 Million Californians

HAROLD G. ROBINSON, Sacramento

• The urgency of the crisis following a nuclear attack staggers the imagination. We would have thousands or millions of survivors making a desperate struggle to survive. Safe water supplies and waste-disposal systems would be gone. In some areas, there would be little or no food or shelter.

Yet California has already manned a medical arsenal that is second to none in the United States. We have stored 115 emergency hospitals at strategic points, and through the county medical associations we have appointed cadres including physicians, nurses and technicians. Plans have been made for workers who will assist in setting up the hospitals and first aid stations.

In our future operations we will continue to place strong emphasis on the medical phase of our program of disaster care.

The program would be just as essential in the event of major natural disaster as nuclear war.

Our objective is a simple one. We are seeking to preserve the human resources which are necessary for recovery.

California's medical profession, with the allied professions of nursing and technical skills, has a vital interest in continuing operations to the maximum extent even under the most trying conditions.

THE California Disaster Office has long been appreciative of the fact that the medical profession, busy though it is with its urgent daily business, has found time to become a bulwark of our state's program of nonmilitary defense.

No profession has contributed more time to public service, nor responded more willingly and effectively to government's appeal for cooperation in survival planning.

I will touch upon three complex and vital phases of the involved question of disaster care for the third largest state in the United States. First, I will outline the need for disaster planning in a broad sense. Second, I will summarize what the California Disaster Office has done about this challenge, up to now. And third, I will describe my own particular prognosis for the future of the program—something that can be achieved only with your continued, and superlatively effective, cooperation.

Quite apart from the merits of nonmilitary defense, its proponents are forced to spend a large part of their time seeking greater public acceptance and justifying their existence generally. This can be a vexing proposition. At times when I have entered my office in the morning I have felt like the physician who greeted one of his most persistent patients, a tireless hypochrondriac, with the question: "Well, Mrs. Adams, what do you think is the matter with you this morning?" And she replied:

"Doctor, I hardly know. What's new?"

Our problems have often seemed to turn up with the same unfailing regularity. Often we find that the answers for the doubting Thomases are not easily produced. For my own part, I have occasionally felt sympathetic about the medical student whose instructor had just exhibited a diagram and said:

"The subject here limps because one leg is shorter than the other."

The instructor then asked the student: "Now, Mr. Sneed, what would you do in such a case?"

The student pondered earnestly. Finally he replied with conviction:

"I have an idea, sir, that I should limp, too."

Now, those who have been engaged in nonmilitary defense over a period of years are familiar with the fact that it is an absolutely essential component of our structure of state government, and of our total national defense. We recognize that we still must win over the skeptics so that we can accomplish our objective of protecting the whole and growing population of California.

Nonmilitary defense as we know it today came into being several years after the close of World War II. Since the detonation of the first nuclear weapons—an event which brought the potential of war to the doorstep of every American—the need for the program has steadily heightened.

We of Civil Defense have witnessed the horrors of test nuclear explosions. We have seen the potential for destruction so vast and so terrifying as to numb the senses. We know the death-dealing swath that radioactive fallout can cut through our civilian population, unless adequate precautionary measures are taken. We know how completely our everyday life would be disrupted in the event of nuclear war.

Just as certainly do we know that man can survive these horrors—but only if he is prepared. Preparedness starts in the home—in every American home. To survive as a nation, our people must first be prepared to survive for themselves.

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Until his resignation, July 1, 1960, the author was Director, State of California Disaster Office.

Thus, in essence, the deterrent strength of America lies in the preparedness of its people. The civilian population must realize that we cannot rely in this thermonuclear age on military protection alone. The role of the military in the total defense of the United States is to meet and defeat the enemy. Our only logical conclusion today is that military assistance can complement—but it cannot substitute for—civilian participation in Civil Defense.

At the same time, a state with the topographical, geographical and sociological complexity of California must have a positive, working program of protection against natural disasters.

That is the reason for the existence of the California Disaster Office.

I would like to give you a thumbnail description of some of the work that has been done by the California Disaster Office—a record of which every Californian has reason to be proud. This is not a self-serving statement. The accomplishments could not have been made without the dedicated leadership and assistance of such top-level professional groups as the California Medical Association.

On that subject, I am sure that you are aware that the state's program of disaster care has been called the most progressive in the nation. I have that word from the very able chairman of our Emergency Medical Advisory Committee, Dr. Justin J. Stein. And I have on my own cognizance a personal knowledge of the outstanding work being done by the respected Chief of our Medical and Health Division, Dr. Frank Cole; his dynamic assistant, Dr. Cecil Coggins; and their effective staff.

Thanks to them, and to you, California leads the nation in its program of disaster care. Already, we have stockpiled more than $4 million in medical equipment and well over $1 million in radiological equipment, throughout California.

Thanks to them, and to you, the majority of the 17,000 members of the California Medical Association have a definite assignment in the event of a disaster.

Thanks to them, and to you, medical staffs all over the state have been trained in the operation and use of our 115 emergency hospitals, hundreds of thousands of blood procurement sets, 50 sanitation units and 680 first aid stations.

Since you are thoroughly familiar with the medical program, let me just mention a few of the other areas in which the program of the California Disaster Office has stored the hardware and trained the bodies in its operation.

Our Division of Public Safety has contributed immeasurably to the Fire Service's system of mutual aid. Seeing the need for improved fire communications in our sprawling state, the Division designed and is having built fire communications units which receive full support from the local fire agencies. Local departments are enthusiastic about the 100 state-owned pumpers which we have placed in their custody.

In addition to its other pioneering accomplishments, our Radiological Defense Division has trained 22,000 Californians in monitoring—far and away the largest number trained by any state.

Our Emergency Operations and Programming Division is in large measure responsible for California's first complete Civil Defense Operations Plan, now being used by the Federal Government as a model for other states. The plan was published in March of last year. Since that time, more than 20 state agencies have completed or are close to completing integrated disaster plans. Hundreds of local government agencies are engaged in the same task—with some of the integrated local plans already completed.

Our Equipment and Federal Assistance Division has made it possible during the last eight years for state and local agencies to receive $13.2 million in matching funds in order to improve their nonmilitary defense capability. By the same token, the state, the counties and cities since 1956 have purchased surplus property worth $18.5 million at a cost of $1.1 million.

Our Emergency Communications and Warning Division has made accomplishments of national stature in the development of Conelrad, the emergency broadcasting system required by the Federal Government. It has set up an efficient warning system as part of the total defense pattern. And it has developed and built a mobile communications system of complex nature which is deemed by some experts to be the best of its kind in the United States.

I have already mentioned the medical hardware—the equipment which we have acquired from the Federal Government (chiefly at its expense) and placed in the custody of local agencies. A moment ago I referred to our emergency communications units and the state's 100 fire pumpers. This protective arsenal also includes 29 rescue trucks, 105 radiological monitor trailers, 16 mobile radiological laboratories, more than 10,000 radiological instruments, 265 bell and lights receivers in our warning system—and more. I mention these items to give you some idea of the way in which the Disaster Office spends its time.

In this phase of our work, then, we can point to a degree of success. In the broader phases, however, you know and I know that we have just begun.

The question of public acceptance of nonmilitary defense is one of our thorniest problems. It is one that we will grapple with until we have overcome it.

Much has been done in California to lick the problem. The governor has given us outstanding leadership. He has traveled to Puerto Rico and to Chicago serving as a member of the Governors' Committee on Civil Defense, of which New York's Governor Nelson A. Rockefeller is the chairman. He has reactivated our advisory committees, and personally has instructed them to lend us their full assistance.

In addition, we have formed a committee of publishers and broadcasters which lends us wholehearted cooperation. We have accelerated the flow of news releases and scripts, and have prepared new exhibits which have been well received. Yet praiseworthy as this effort is, we are the first to recognize that it is not enough.

Still to be achieved is public recognition that in today's world there are reasons for having a program of Civil Defense.

We are not warmongers. Unequivocally and totally we reject the accusation that Civil Defense helps to set the climate for war, or that it is any more an invitation to nuclear disaster than your automobile insurance policy is an invitation to an accident.

The people of the United States share with the people of other nations the dream of a lasting peace. We have gone so far as to base our $40 billion annual budget for military defense on purely retaliatory concepts. In other words, we have accepted the premise that the first blow will be taken by the United States.

Gone is the day when we could rely on oceans and allies as shields to enemy attack. The modern aircraft and guided missile, reaching out hundreds and thousands of miles, have crushed this shield. If the United States should be attacked, there would follow a struggle for survival—both civil and military—of the grimmest nature. This struggle would be unparalleled in history. It would demand all our strength and all our resources if we hoped to survive the initial attack and strike back.

Under those circumstances, we are left with two major reasons for the existence of a vigorous program of nonmilitary defense. We need to exert the deterrent power upon the enemy. And, should those efforts fail, we must be prepared to pick up the pieces and rebuild.

It would accomplish little, for example, to save people from the direct or fallout effects of nuclear weapons if they were subsequently to starve or die for lack of medical attention.

At this point in history, no man can estimate how imminent the nuclear holocaust may be. Strong criticism of our defense policies has been voiced by some who believe we are falling behind in the race of armaments. I have no intention of dealing with that question in these remarks, beyond stating my own conviction that a nation's strength must be measured in terms of economic and educational goals, as well as its arsenal of warheads.

The success or failure of our international policy does depend in a very critical measure, however, upon our own attitude toward preparedness of civilians and civilian agencies for dealing with unprecedented nuclear disaster. For that reason I have grown increasingly impressed, of late, with the homely statement that when Noah built the ark, it wasn't raining.

In our search for a peace formula that will adapt to our perilous times, we must be realistic no matter how distasteful or unglamorous the task appears. Our tasks in Civil Defense are not glamorous. You have my word for it that they are often unrewarding. Many people claim that we are playing games for eventualities that may never materialize. Thus, they argue, we are wasting time and money. I hope they are right—for I firmly believe the alternative could be total destruction.

What we are doing is buying insurance to take care of an attack involving advance planning as the prime means of survival. I often observe the firemen in my neighborhood, sitting around waiting for a fire that may never happen. This does not disturb me. I am happy in the knowledge that vigilance and preparedness are waiting to put out the fire of war that we devoutly hope will never come.

Basic to a just understanding of the need for Civil Defense is one glaring fact: We are not setting up a corps of men in arm bands who will spring to our defense and protection when the siren sounds. Instead, we are using the time, blessedly given to us—this period in the cool gray of the morning, pre-attack—to build in to our existing agencies—fire, law enforcement, medical and so on—the ability to take care of citizens in a terrible situation for which there are no guide lines in all the history books on all the library shelves.

We need your continued staunch support. Make no mistake about it—you are among our most valued allies, for you have already acquired the professional training and the skills. Under disaster conditions you would continue your day-to-day discharge of Hippocratic principles. But you would be working under the most challenging and trying circumstances in helping to alleviate suffering and rebuild our nation.

The urgency of the crisis following a nuclear attack staggers the imagination. We would have thousands or millions of survivors making a desperate struggle to survive. Safe water supplies and waste-disposal systems would be gone. In some areas, there would be little or no food or shelter.

Only with the assistance of trained professional men and women, including in a very important sense the men and women of the California Medical Association, could we even hope to spring back.

California's medical profession has its own vital interest in continuing operations to the maximum extent, even under the most trying conditions. You would be playing an essential part in all operations designed to help our state survive, recover and return to the way of life in which we believe so devoutly.

Our program for the future must include all actions which would make it possible for us to assist and care for the survivors of an attack or disaster; preserve civil government as we know it, and want to keep it; make maximum effective use of the remaining material resources; and merge the manpower and resources left to us, under the leadership of civil government, into an effective attempt to achieve our national objectives.

It is reasonable and logical that nonmilitary defense should continue to be your working partners. You are laboring unceasingly to eradicate disease. We are laboring to achieve a prepared public and governmental structure. As you reduce the prevalence of the killers, you mark new progress for mankind. As we succeed in dispelling public indifference to the need for a survival program, we add to the strength of our state and nation.

In that sense, we hope one day to share with the medical profession the incomparable accolade given to you by Lord Bryce: "Medicine is the only profession that labors incessantly to destroy the reason for its own existence."

In closing, may I sum up as follows:

If a citizen demands wise government, he must recognize that wise government is the product of an intelligent citizenry and nothing else.

If a citizen demands that his country protect him, he must cooperate unselfishly in giving his time and money to maintain the institutions which afford that protection.

California Disaster Office, P. O. Box 110, Sacramento 1.

What the Surgeon Ought to Be

The conditions necessary for the surgeon are four: first, he should be learned; second, he should be expert; third, he must be ingenious; and fourth, he should be able to adapt himself. It is required for the first that the surgeon should know not only the principles of surgery, but also those of medicine in theory and practice; for the second, that he should have seen others operate; for the third, that he should be ingenious, of good judgment and memory to recognize conditions; and for the fourth, that he be adaptable and able to accommodate himself to circumstances. Let the surgeon be bold in all sure things; let him avoid all faulty treatments and practices. He ought to be gracious to the sick, considerate to his associates, cautious in his prognostications. Let him be modest, dignified, gentle, pitiful, and merciful; not covetous nor an extortionist of money; but rather let his reward be according to his work, to the means of the patient, to the quality of the issue, and to his own dignity.

—Introduction to the General Chapter, Ars Chirurgica, 1363; first printed edition at Lyon, 1478; first English edition, 1541; GUY DE CHAULIAC (c. 1300-68).

Submitted by ALBERT FIELDS, M.D.

Preparation for Disaster in California

FRANK L. COLE, *M.D.*, Sacramento

• The operational plan for medical preparedness in California is divided into three main divisions, viz: Expansion of existing medical facilities, augmentation of practicing health personnel, scope of service expected.

Medical and health personnel and facilities will be expected to modify and adjust their care of casualties according to the situation present such as strategic warning, alert signal (yellow), take cover signal (red), and the post-attack period.

This service is concerned with conservation of resources (human) and must do everything possible to return people to a status where they can help rebuild our nation.

Supplies already obtained and stored throughout the state consist of first aid stations, emergency hospitals, blood procurement equipment, sanitation units.

Over a half million first aiders and more than 96,000 home nurses have been trained by the local chapters of the American National Red Cross.

UNDER THE Civil Defense Operations Plan which was recently completed and published by a group of planners employed under contract with the Office of Civil Defense Mobilization (OCDM) and working in the State Disaster Office, the medical and health plans are very distinctly and intelligently set forth. With this plan, the operational concept is:

1. Practicing medical and health personnel will be augmented with other personnel who have medical and health experience.

2. Existing medical facilities will be expanded for emergency operations. Civil Defense emergency hospitals will be activated and other facilities converted to medical use.

3. The scope of Medical and Health Service operations will be governed by the basic courses of survival action, such as warning time and the number of casualties. This action is divided into four larger phases as follows:

Strategic Warning. During this phase Medical and Health Service in danger zones will assist in the dispersal of infirm and hospitalized people together with critical supplies and equipment to support areas. Services located in support areas will mobilize to the extent necessary to provide medical care for evacuees.

Alert Signal (yellow). During this phase Medical and Health Service in danger zones will take action in accordance with local Civil Defense plans. In the process of dispersal, the requirements for medical care are primarily associated with evacuees. Emergency first aid will be available in traffic diversion and other service areas. Sanitation procedures will be established in all these areas where numbers of people have congregated. Residents of support areas should be prepared to provide home care for the ordinary sick and injured but should refer real emergencies to the Medical and Health Service.

Take Cover Signal (red). During this phase, Medical and Health Service personnel will seek refuge and cover, the same as other personnel. Medical personnel will render what emergency medical treatment they can to people in refuges.

Post Attack. The greatest demands will be made on the Medical and Health Service during this phase. Initially, medical and health operations will be conducted on a minimum care basis. This, however, will require a tremendous amount of medical treatment and care. As the situation clarifies and conditions permit, more definitive medical care will be provided and better health standards will be established. The objective is reestablishment of normal medical and health services as soon as possible. Following an attack the two principal functions of the Medical and Health Service will be to provide (a) first aid for sick and injured in the affected areas and the subsequent evacuation of patients, and (b) medical and health care for the surviving population.

Following an attack the Medical and Health Service will stress:

(a) Priority treatment for the less seriously injured.

(b) The release of all hospital patients except the most seriously ill.

(c) Hospitalization of new patients only as a lifesaving measure.

(d) Strict control of blood, critical medical supplies and food for patients.

(e) The enforcement of sanitation measures.

Presented as part of a Symposium on Disaster Medical Care at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Chief of the Medical and Health Division, State of California Disaster Office.

(f) The control and treatment of communicable diseases.

(g) Provisions for immunizations where indicated and practicable.

(h) Segregation of certain infectious and contagious diseases.

(i) Strict supervision of food handlers and water supplies.

When possible, individual care related to public health and morale will be initiated. Such services as psychotherapy, plastic surgery, physical therapy, prosthetics and other nonemergency services will not be provided pending the rehabilitation phase of the operation.

Medical installations such as first aid stations, emergency hospitals and auxiliary hospitals will be closed as rapidly as the need for them no longer exists to the point where fixed hospitals can provide the required care.

The conservation of all resources is important, but the conservation of our human resources assumes paramount importance if we are to survive as a nation after an all-out attack. Buildings, roads and bridges can all be repaired and rendered as good as new. But to replace a well educated and experienced human being requires not a few months but approximately 30 years. Even to replace unskilled laborers will require from 16 to 18 years. Therefore, the Medical and Health Service, in dealing with such resources, becomes one of the most important in Civil Defense.

Under administrative orders from the Governor's office, three of the state departments become intimately associated with the Medical and Health Service in time of extreme emergency.

1. *The Department of Public Health* becomes the Medical and Health Service. The director of the department becomes the chief of the Medical and Health Division and all of the available resources of that department are available to this division.

2. *The Department of Agriculture* has been delegated the responsibility of identification and protection of animals and plants exposed to A, B, C warfare efforts and decontamination supervision under certain conditions.

3. *The Department of Mental Hygiene* has been given the responsibility of assisting the Medical and Health Service in every way possible consistent with the resources available for essential activities.

Following is a resumé of what the Medical and Health Service has done to prepare for the conservation of human resources:

Supplies

In the California Civil Defense and Disaster Plan, one of the duties of the Medical and Health Division is to procure and store medical and health equipment for use in case of either natural or war-caused disaster. In this connection, we have procured 680 first aid stations. These have been made into units, crated, boxed and stored in various strategic locations extending from the Oregon border to the Mexican border and the full width of the state. With each one of these stations the assigned personnel is capable of handling from 600 to 1,000 patients per day. Originally these first aid stations were stored principally in the critical target areas. However, it was soon found that this was not a logical place in which to store them and most of the stations were moved to other locations. Now only a few stations remain within each target area, and they are there for ready availability in case of natural disasters such as fires and earthquakes.

We have procured 130 Civil Defense emergency hospital units which are also stored in various locations throughout the state, but mainly in regions surrounding the critical target areas—the San Francisco Bay Area, Los Angeles area and San Diego area. Each of these hospitals, when fully manned, is capable of handling 200 to 500 patients per day or more, depending on the availability of additional beds and bed space in the immediate surroundings. Each one of these hospital units is complete in itself and is designed primarily as a surgical hospital. Each contains equipment for three operating rooms, sterilization equipment, a self-powered x-ray and developing machine, laboratory equipment, a water tank capable of holding 1,500 gallons of water, together with a gas operated generator capable of furnishing electricity to light the hospital in case the normal utilities are out of operation.

Likewise, 378,000 blood procurement units are stored at various places throughout the state, but mostly in the larger blood banks. There are 15 of these large blood banks, three of them operated by the American Red Cross and 12 by the California Blood Bank Association. In addition to these there are many smaller blood banks that are operated as private units or in connection with hospitals. The operating blood banks of the state have on file the names and addresses of a large number of donors with blood of all types. In case of emergency the type of blood which would be required for the first 24 to 48 hours or longer, would be Type O, which is the universal type. We feel confident that if we made an appeal on the radio or through the press or any other news media, that we could get hundreds of Group O donors in a very short time. We know positively that in the correctional institutions of the state are a large number of inmates who have been typed and who will readily give blood upon any occasion. This has been proved time and again by the Red Cross and other blood drives in the past.

There are 50 sanitation units stored throughout the state. These are self-powered chlorinating units which are used for purification of water. They have been used many times in the past few years and we know that they are operable and efficient.

Training

For several years this division was very much concerned about training first aiders and home nurses. However, this problem has been pretty well settled by the various chapters of the American Red Cross throughout the state. Since 1951 over 656,333 have been trained by the Red Cross chapters and have been given certificates of proficiency. This is a tremendous reservoir of first aiders. For a time we endeavored to assign these to various first aid units, but because of the moving about of people and the tremendous bookkeeping involved, this procedure was given up. Now we are relying on a course similar to that which we would use for the procurement of blood—appeals for first aiders to report to various stations for duty. In a similar period 96,000 home nurses have been trained and over 14,405 registered nurses have been given courses in disaster nursing.

Many rather extensive exercises have been held throughout the state by various sections of the Medical and Health Service.

Hospital Disaster Plan

For several years efforts were made to get the hospitals in California to develop hospital disaster plans. In 1951 very few had plans of any kind, and most of the few that were in effect were impractical. Through the efforts of the Medical and Health Division, the California Hospital Association, the American Hospital Association, the American College of Surgeons and the joint Commission on Accreditation of Hospitals and various other national organizations, requirements were written which are now in effect. These requirements are that any hospital in the State of California seeking accreditation by the Joint Commission must have a workable hospital disaster plan and this plan must be put into effect at least once a year. One might ask why hospitals need a disaster plan, since they are constantly being faced with results of disasters; but the difference between what they are faced with daily and what they will be faced with during a war-caused or large natural disaster is in the magnitude of the effort. We do not look for any new diseases or any new types of injuries in an all-out disaster, but we do look for a tremendous increase in the number of casualties, which in itself would overwhelm any organization that did not have a well organized disaster plan.

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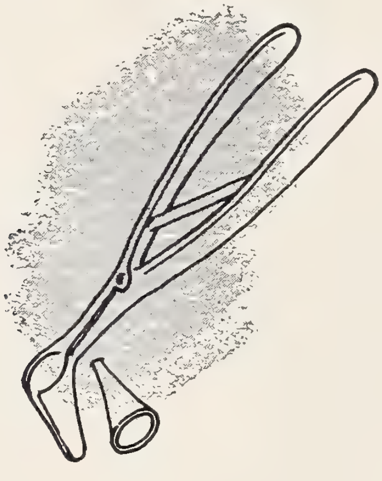

Disaster Medical Care

The Objectives of the A.M.A. Committee and the Organization Of a County Society Program

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THE GUIDING UNIT and the spokesman in the work of the American Medical Association in disaster medicine is the Council on National Security. The Council on National Security is an appointed council charged with the study and planning of all measures relative to medical manpower, both military and civilian, that is available for immediate and reserve use in the event of large scale local disaster or in the event of total warfare. Also included in this category are all the health services furnishing support to the effective operation of medical personnel.

For purposes of maneuverability and division of labor, the Council has two working committees, namely, the Committee on Military Affairs (nine members) and the Committee on Disaster Medical Care (eight members). We will discuss only the Committee on Disaster Medical Care. The members of this committee were selected without regard to geographical representation. Selection was on the basis of outstanding local work in medical Civil Defense, as related to preparations for total warfare.

Objectives of the committee are to promote medical disaster planning from the national level by:

1. Informing the individual physician of the latest developments of medical disaster planning and care, and by disseminating such information by correspondence, medical publication, assembled meeting and the lay press.

2. Assisting state and county medical societies with medical disaster planning and care, when so requested.

3. Continuing and expanding present cooperation and liaison with appropriate Federal Government agencies and other national associations relative to national level planning; and

4. By informing the general public of the development and progress of medical disaster planning and care, in order that there be instilled in the population a sense of medical security in event of large scale local disaster, and a sense of possible survival care in event of total disaster.

The functions of the committee have steadily increased from year to year, as the problems of disaster medicine have made themselves more apparent. Current functions are as follows:

1. Since 1949, the committee has sponsored the Annual County Medical Societies Conference on Civil Defense. This is held as a two-day conference, usually on the first weekend of November in Chicago. Subjects are presented by national authorities in their respective fields, and range from the latest information on fallout patterns, to more down-to-earth everyday reviews of large scale local disasters from man-made or natural causes. Workshop discussions of the final results of trial exercises contribute much to the knowledge of the participants. This year the tenth annual conference resulted in a record attendance of 270 officials of state and county medical societies and other medical and allied personnel active in Civil Defense. Thirty-three states and Canada were represented.

2. Since 1953 the committee has sponsored the annual one-day Conference on Civil Defense of the American Medical Association at the annual meeting of A.M.A. This year's meeting had 300 in attendance, representing some 40 states.

3. Since 1950 the committee has sponsored effective liaison with all federal agencies. Examples of the results of this liaison were (a) an endorsement of the post of Assistant Director of Health in the Office of Civil Defense Mobilization (OCDM), which gave effective voice to medical policy; and (b) an endorsement of the plan of the Department of Health, Education, and Welfare to use the established facilities of the USPHS to implement medical disaster planning for OCDM on a national basis.

4. In 1957, on contract with the then FCDA, Federal Civil Defense Administration, the committee produced, after much research and development, a national plan for disaster medical care in the event of total warfare. This plan was completed in April of 1959.[4]

5. The committee participates in the joint committee evaluation and study of the program in the medical schools, termed Medical Education for National Defense, which supplants the former Medical ROTC. This course indoctrinates the medical student

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during his class days in the principles of disaster medicine.

6. The *Civil Defense Review* is published by the committee. It has a circulation of 2,000. Compiled in it are all current and pertinent information relative to medical disaster planning and events in the United States.

7. Also the committee holds biannual meetings with the chairmen of state medical society disaster committees and the respective state medical disaster directors. These meetings are held in the representative OCDM regions. Through these most important meetings the committee seeks to determine the particular needs and problems of each state medical disaster committee.

As your western representative on this committee, I will appreciate your views on any problem of medical disaster planning that you feel can be beneficial to this entire program.

As to the organization of a county medical society for medical care in event of disaster, I must emphasize that there can be no effective disaster medical care without the participation in and the planning for such care by practicing physicians. The work of planning and the direction of such care must be the duty of the physicians' representative body—namely, the county medical society.

The organization of a county medical society for disaster medical care must begin with the appointment of a committee on disaster medical care. Physicians selected for this committee should have either executive organizational ability, a background in traumatic medicine, or field combat experience in World War II or Korea. To effect an adequate program, the committee should consider the following:

1. Objective:

a. To provide effective medical and health services planning and care for the population area served by the society in the event of large scale local disaster.

b. To coordinate such existent planning with peripheral county medical societies for mutual aid and care in the event of total disaster.

2. Organization:

Basic planning should be divided into two components; namely,

a. Effective means of medical care of casualties from disaster site to hospital center. (Existent municipal systems may be found to be adequate; but if there is no adequate plan, one must be organized.[1])

b. The designation and establishment of a command post at the medical society headquarters or the county Civil Defense control center, whichever is most feasible. The command post, which must have good liaison with the resident Civil Defense coordinator of the county, functions as the coordinator's medical staff consultant during a large scale local disaster. Specifically the following duties may be assigned:[3]

1. Furnish additional medical nursing and ancillary medical personnel to disaster sites or hospitals on request.

2. Have knowledge of current bed census throughout the county and shift casualty loads from disaster sites on request of disaster site medical officers or hospitals.

3. Assist the Civil Defense coordinator of the county in the event of overload of entire county bed availability by channeling requests to peripheral county medical societies for help in providing out-of-county available beds.

4. Assist the Civil Defense coordinator of the county in getting authorization from the regional office of the California Disaster office for indigenous use of stored Civil Defense hospital units if such seems feasible.

5. Fulfill requests for whole blood in accordance with the capacity of the local blood bank.

6. Initiate requests to the regional office of the California Disaster Office for narcotics and other items if the needs cannot be met within the county.

7. Recommend procedures as to matters involving mortuary services and facilities and public health when such problems cannot be solved at the disaster site or local level.

Personnel of the command post should be composed of coordinators for each of the following disciplines, with three or more alternates: Medical, nursing, dental, veterinary medical, pharmacy, mortician-coroner, blood bank.

3. Hospitals:

The county society through its Committee on Disaster Medical Care will request the chief of staff of each hospital to appoint a committee on disaster medical care. The first function of this committee will be to write a hospital disaster[5] plan compatible with the facilities and personnel existent in the hospital. This plan should include three basic phases:

Phase One—Hospital disaster planning for disaster within the hospital due to fire, explosion, earthquake damage, epidemic, etc., defining provisions for care of all persons in the hospital.

Phase Two—Hospital disaster planning for large scale local disaster in which the hospital functions to receive large number of casualties from the community or area it serves.

Phase Three—Hospital disaster planning for total disaster due to widespread national destructive forces in which the hospital may either evacuate personnel and regroup in another area before disaster strikes or, if the hospital survives the disastrous force, be able to mobilize its remaining facilities and remain functional.

4. Resources:

The county medical society Committee on Disaster Medical Care, through its command post personnel and planning, will be cognizant of all medical resources within the county society's jurisdictional area. Such resources defined should be:[1]

a. The census of all beds, hospital and convalescent; also, available indigenous Civil Defense emergency hospital stored units, and buildings suitable for conversion for added bed space.

b. Census of ancillary medical personnel, especially nurses, dentists, veterinarians, pharmacists, laboratory technicians, morticians and coroners and deputy coroners.

c. Rough inventory figures of drugs, vaccines, dressings and intravenous fluids of the average hospital in the area, as well as the same items in the nearest wholesale drug firms.

d. The availability of food, water, auxiliary power, heat and light, as they pertain to medical care facilities.

5. Liaison with City and County Government:

There can be no effective community or county medical disaster planning and care without full cooperation and agreement between medical society disaster medical care committees and city and county Civil Defense coordinators. The county medical society, in its planning, must seek to provide the best immediate and thorough medical support and care to the community and county Civil Defense effort in time of disaster.

In areas having adjacent military installations, the representative surgeon should be requested to participate in medical disaster planning, in order that in an extreme disaster state, the available facilities of the military installation may be easily integrated with civilian resources and confusion avoided.

The California Disaster Office medical personnel as well as the regional USPHS surgeon (OCDM) should be informed of any completed planning, and the medical society committee should call upon these offices for any advice it may need.

6. Communications:

Organizational structure and function will collapse without communication. All available types of communication must be maintained, if possible, between the county society command post, the county Civil Defense control center, the hospitals in the area and the disaster site. Whenever possible a survey should be made in the county area to determine the kind of short-wave radio equipment best suited for use. Installation of such equipment at all key sites should be carried out and provision made for operation of it by resident personnel familiar with medical terms and technology. (The A.M.A. has made representation to the Federal Communications Commission for medical communication on 13 frequencies in the 152-162 megacycle band and four frequencies in the 42-52 megacycle band.)

7. Test Exercises:

The county medical society Disaster Medical Care Committee should sponsor annually a test exercise involving the actual functions of all casualty care from disaster site to hospital center. This function has no substitute in pointing out weakness in planning, and it also serves as a test of the adequacy of any improvements that may have been introduced.[2]

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Problems Associated with Medical Disaster Care

Preparations in a Large Southern California Area

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• In the organization for dealing with medical disaster, the region is in an intermediary position, between the State Disaster Office and the operational areas. Regional functions are largely those of coordinating the activities of the areas, and are based upon directives and plans from the state level.

The regional medical chief is a member of the staff of the Civil Defense coordinator and must advise him in all matters related to the health of the people, including medical and casualty care, hospitalization, public health, sanitation, preventive medicine and the special problems of biological, chemical and radiation hazards. Coordination with the other Civil Defense services is necessary.

The basic medical plan is to give emergency care in the first aid stations and then evacuate casualties to hospitals when and how the situation permits. Regional function is to obtain personnel, supply, equipment and hospitalization support when required.

Dispersal of danger zone populations to support areas creates many medical and public health problems among the displaced people and the residents.

Survival of the nation requires altered concepts of casualty management. The least injured who have the greatest productive potential should have the highest treatment priority. Short, lifesaving surgical procedures must have precedence over long, complicated operations.

No plan is any better than the individual doctors, nurses and other personnel who will put it into operation.

MEDICAL CARE DISASTER preparations are designed to care for the victims of either a local or so-called natural disaster, or for a major disaster such as that caused by an enemy attack. Much of the planning, throughout the country, is based upon the concept of caring for situations of local or natural disasters, with the hope that in some way this can be greatly magnified to cope with a truly major catastrophe. This philosophy can be justified only by the truism that the whole is no more than the total of its parts, but it evades the issue of the major condition. It seems to be much more realistic to consider the component parts, then to plan for the major occurrence. If any lesser disaster occurs, then a part or parts of the all-out plan can be activated.

There are many problems related to planning at any level. In Region I there are many special ones, some of which are related to the size of the region, its population content and distribution, and the great variances in topography, climate and political and economic organization.

The size of the region in itself poses problems. Consider that from San Diego on the south, to Paso Robles, which is practically at the northern boundary of the region, it is about 350 miles; and going straight across from west to east, at one of the more narrow parts, it is 225 miles from Los Angeles to Blythe. The 12 counties in Region I represent more than one-third of the total area of the state.* Compared with other parts of the country this area represents about that of New York and Pennsylvania combined, or all of New Engand.

Population concentration is also very great, with some 8,725,000 persons, or about 60 per cent of the state's population living in the region. In addition to sheer numbers, the distribution of these people is important. In Los Angeles County there were 5,790,000 people as of July 1, 1958, and there were 952,000 in San Diego County. As you know, the danger zone concept has supplanted the older idea of target cities. The Los Angeles danger zone includes most of Los Angeles, Orange, Riverside and San Bernardino counties, where some 6,500,000 people live. When these population concentration figures are considered, the enormity of the problem from the aspect of numbers of people alone becomes more apparent. It is estimated that if a 20-megaton device would be detonated over Los Angeles without warning, there would be 1,380,000 persons killed and 500,000 injured. If there were two hours' warning, the estimates are that 410,000 would be killed and 390,000 injured. Assuming that two-thirds of the injured would require hospitalization, and that the peak load would not exceed 75 per cent of the total injured, some startling figures can be developed. If Los Angeles, Long Beach and San Diego were all hit, the total number of injured for the region who should be hospitalized would vary from 261,000 to 333,000. Obviously it

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Chief, Medical and Health Services, Region I, State of California.

*By changes effective July 1, Region I was reduced to San Luis Obispo, Santa Barbara, Ventura, Los Angeles and Orange counties.

will never be possible to develop that many hospital beds in the region. One of our greatest problems is to provide even a fraction of the theoretical number of beds required.

Another problem that is directly related to the one of hospital bed shortages, is that of effective triage and then separation of patients into priority of treatment categories. Hospitalization must be reserved for only the most serious cases. This can be achieved by the treatment in the first aid stations of many persons who would be sent to the hospital under ordinary circumstances. A lot of education and training, and the proper selection of those to do the triage and classification, are necessary to enable this part of the casualty care system to function in the required manner.

The wide topographic and climatic variations in the region must be considered. There is a long ocean frontage with coastal basins, and there are hills, mountains, broad valleys and deserts. Both the highest and lowest points in the state and the country are within the region. Depending upon the time of the year, the climate can vary anywhere from very cold to blistering hot. The availability of satisfactory water is also very important in this part of the state. All these factors must be taken into consideration, since they affect planning for either a limited or major disaster, for victims or dispersees.

Although it is purely a logistical item, attention must be given to surface and air transportation facilities and routes. They can profoundly affect movements of population masses, which in turn can have both direct and indirect effects upon the medical situation. Of more immediate concern is the impact of transportation limitations upon the dispersal, evacuation and transfer of patients and the movement of supplies, equipment and medical personnel.

The availability and distribution of resources are of more importance in planning than any other single element. Human resources, of medical, nursing, allied, paramedical and ancillary personnel are included, as well as fixed and emergency hospitals, first aid stations, drugs and medications and general and medical supplies and equipment. The quality and quantity of medical care and services will be directly determined by resources at hand or obtainable from outside the region. A natural concomitant of urban growth is the concentration of these resources in the population centers, where they are highly vulnerable to loss by even rather limited attack.

Detonation of a 20-megaton weapon over downtown Los Angeles would result in the loss of at least 75 per cent of the hospital beds in Los Angeles County. Long Beach would lose all its hospitals if it were a target, and San Diego almost all. It has been estimated that there are normally over 19,000 patients in hospitals within critical target areas, who should be dispersed if sufficient warning time were given. Surveys of the region reveal a normal bed capacity of about 21,000 outside the target areas. Even with expansion of the hospitals in support areas, a large proportion of the patients in those hospitals would have to be discharged to make room for the dispersed patients. But no one knows how many of these hospitals would be made untenable by radioactive fallout.

Sources of drugs, medications, supplies and equipment are the first-aid stations, the 200 bed emergency hospitals, retail and wholesale drug outlets, physicians' supply companies and warehouses of the manufacturing pharmaceutical firms. The first-aid stations are more or less concentrated within the critical target areas, so a high loss rate can be expected. Fortunately, the emergency hospitals have been positioned where it is felt that they are relatively safe. However, we have far too few of them, and even with the number on hand it has been very difficult to obtain satisfactory storage space for them. Most of the wholesale and retail drug sources, the supply houses and depots are in the urban centers, and therefore are subject to heavy losses. Hospital inventories are adequate for normal operational conditions, but would be very quickly depleted by an emergency.

Of great concern is the fact that cities that are subjected to major attack will not be able to care for themselves. It is problematic how much assistance can come from surrounding communities. The burden must fall upon the support areas, which are the least prepared with personnel, facilities, supplies and equipment for the task.

In the support areas medical care of the resident population cannot come to a complete halt. Refugee and mass care centers will present a number of problems, not the least of which will be medical care of the displaced persons, who can be expected to be emotionally upset and to be living under the most adverse conditions. The small health departments of these counties would be pitifully incapable of assuming the multiple public health, communicable disease control and sanitation supervision duties that will be required at these centers. It seems probable that all of these functions will have to be done by physicians among the displaced persons. One of our problems is how to give *all* physicians some training in the fundamentals of public health work and sanitation supervision, so that explosive epidemics, especially of diseases of the upper respiratory and gastrointestinal tracts, will not sweep through these intended havens.

In all disasters except floods, the requests for blood suddenly increase. The procurement and distribution of safe blood, in amounts sufficient even partially to satisfy the demands, will pose many problems. Thousands of donor sets are stored throughout the region, but the needles must be inserted into the veins of donors, the blood has to be tested and processed, and then distributed in keeping with accepted techniques. The Red Cross regional blood center is the largest in the country, but it would be woefully inadequate and it is highly centralized. Very few hospitals actually have functioning blood banks.

Another purely logistical element that is a cause of great concern is communications. The medical service has no organic communications of its own. Without communications the best that we could provide would be a disorganized, uncoordinated medical potpourri. It would truly be a disaster. We must face that prospect now, for if such a calamity should befall us, do you suppose that the public would accept the excuse that we did not have communications?

In the final analysis, no medical care plan can be any better than the physicians who are the very heart and soul of it. The greatest problem that confronts all of us, in every part of the country, is that of trying to get the members of the profession to face up to reality and to accept their traditional responsibilities in this area of medical services to the public. Acceptance means not just tolerance, but active support and also preparation to assume *any* role that may be assigned to any physician, either in any aspect of medical care or in public health or sanitation. We will never have really effective medical disaster preparations until this problem is solved.

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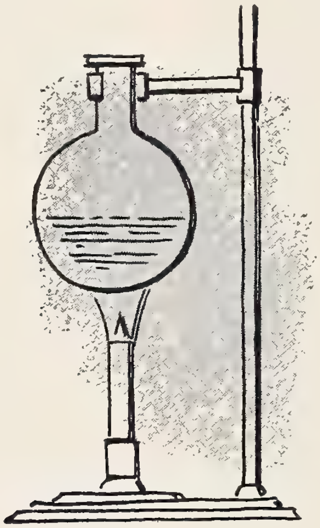

The Coroner and the Common Law

IV. Basic Qualifications of a Coroner or Medical Examiner

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THROUGHOUT the United States legal qualifications for the county medicolegal officer as currently established by statute are either meager or nonexistent. In one state (Arizona) there is no medicolegal practice act. In another (New Mexico) there is no coroner, inquest being held by a justice of the peace. In 37 of the United States anyone may be coroner. In four states coroners are justices of the peace; in three the coroner may be anyone who acts on the order of either the court or the prosecuting attorney. In nine states the medicolegal investigator must be a doctor of medicine. By local option in some counties among the United States the coroner has to be a doctor of medicine although there is no statewide requirement. In three states the medicolegal officer is a medical examiner.

Because of the diverse responsibilities of administration, investigation and inquest which are put upon him, in most localities, the coroner must manage his office, be an officer of inquiry with both medical and detective abilities and an advocate who is able to hold court where he may hear and adjudicate evidence. He also often has to be a politician. Such is the scope of knowledge and action required in medicolegal work that the coroner, to conduct his office properly, needs not only broad knowledge and experience but must have expert consultation, advice and technical assistance in diverse fields. It is not possible for one man today to encompass the multifold medical, legal and scientific areas. The basic qualifications obviously vary with the locality. Large urban centers have problems and demands that are very different, although no more difficult, from those encountered in smaller municipalities and in rural areas. In larger centers of population pressure for improvement has been heaviest and several different approaches for solution of the problem have been made.

San Francisco

In 1928 the freeholders of the City and County of San Francisco were directed to prepare a new charter under which the city might operate. One of the radical changes they instituted was the removal of the coroner from elective office. They directed that a licensed physician-surgeon be chosen by appointment to fill the office. The coroner incumbent at the time of this change in requirements was a licensed physician under the laws of the State of California. Because of his long experience he was blanketed in as a civil service employee with a civil service tenure for life. It was further stipulated in the charter that when he vacated the office, coroners thereafter would be chosen by a civil service examination with credit being given for experience, previous training, education, and grades received in an open examination. Previous to this time the term "autopsy-surgeon" had been made an official designation by the legislature of the State of California for physicians performing autopsy.

Under the terms of the new charter, the coroner was permitted to appoint autopsy surgeons, pathologists and chemists to his office staff. Money was appropriated for such services and these funds were included in the city budget. The newly appointed coroner, with a meager but somewhat increased budget, employed an autopsy surgeon and acquired the services of a pathologist who made gross and microscopic examination of material submitted by the autopsy surgeon for corroborative diagnosis.

This novel approach to a city and county's medicolegal problems produced improvements, although it established a system which was radically different from that of medical examiner. The coroner was an independent official accountable neither to the police department nor the district attorney's office. He had his own investigating staff of deputy coroners who inquired into the circumstances of death. The medical staff established the cause of death. He acted as the administrator and conducted the inquests. With this change in organization and improvement of facilities, the percentage of cases accepted and investigated by the coroner increased and the autopsy rate soon approximated 100 per cent. This figure has been maintained for 30 years.

Although the changes were radical, the coroner did not relinquish any of his authority or his existing privilege of inquest and investigation. He also retained the coroner's jury, which provides a system of balances and checks for the coroner, his deputies, the autopsy surgeon, the pathologist and the legal representatives of involved persons. Although different in name and with certain sociopolitical differences, the scientific organization, the operation

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and the results of such a system are very similar to those of a medical examiner's system operating in a similar area. After the passage of years and with the resignation or retirement of many of the original members of the office, a new medical staff was recruited from the faculties of the pathology departments of the Stanford and University of California medical schools. Currently the pathologist is a professor of pathology in the University of California Medical School and the autopsy surgeons are university-trained and board-qualified specialists in their field.

Following this example in San Francisco, other counties in California have chosen physicians as their medicolegal officials either by appointment or by competitive examination. In California today there are nine counties in which the medicolegal official is a licensed doctor of medicine.

Even in areas where the coroner is a physician and now has an able staff of consultants and assistants, the present stature of the medicolegal service is the result of a gradual expansion in response to evolutionary demands and the growing availability of desirable personnel. Other counties have made progress in other ways by contracting for special services and soliciting outside help from other counties, state agencies and private laboratories.

Under our legal system of establishing statutes by precedent which later become law by acceptance, no clear-cut code exists which establishes basic jurisdiction of the office of coroner. There are, however, five general categories of responsibility which may be accepted. These are:

1. Cases of homicide arising from criminality, which includes first and second degree murder, manslaughter, arson, rape, mayhem, abortion, culpable negligence, and death in suspicious circumstances. (The suspicion in such cases is usually a suspicion of criminality.)
2. Cases of death from suicide.
3. Cases where there is a financial association and relevance such as in industrial accidents, life insurance claims, or other liabilities wherein death has a monetary value.
4. Cases comprising deaths due to the products of civilization, such as traffic accidents, smog fumes and other vapors, carbon monoxide and dioxide, industrial solvents, food poisoning, pesticides and weed-killers, serums, vaccines and "wonder drugs." This latter group is growing in importance as medicine develops a fuller knowledge of disease processes and, through current drug therapies, produces some new diseases while eradicating or suppressing some old ones.
5. Cases of deaths which, although apparently of natural causes, are sudden and about which there is inadequate clinical data.

Neither the legal code of authority nor our existing medicolegal facilities are adequate to meet this expanding demand. The need for legal revision of the public health and safety codes in order to establish a group of basic principles for the effective operation of a good medicolegal investigative system has become obvious. Repeated attempts have been made to reorganize effectively and recodify on a county, state-wide and national basis. Interesting and productive among these efforts was the model postmortem examination act which was drafted by the National Conference of Commissioners of Uniform State Laws in Chicago in 1954. The California Assembly Judiciary Subcommittee on Police Administration, in September, 1959, issued a joint report on medicolegal investigation in which certain farsighted recommendations were made. Another subcommittee, the California Assembly Interim Committee on Public Health, had previously studied the outstanding differences between the medical examiner system and the coroner system and subsequently suggested an elaborate revision of laws pertaining to coroners. These reports have been thorough and thoughtful and the recommendations have been valuable. Meanwhile, the evolutionary processes have continued to contribute subtle changes in all existing systems and many of the deficiencies which were noted in old reports have been corrected. Many services previously noted in these surveys as needed but not available have since been provided in some areas due to public demand and social pressure.

There have been repeated local, state-wide and national attempts to legislate the coroner's office out of existence and substitute in its stead the office of medical examiner. These efforts are generated by persons who believe that changing the names of officials or their offices would improve their performance. The appellation is unimportant. The fundamentals of successful operation of the office remain the same in any circumstances. Certainly a legal code of basic principles and elementary requirements for a good state-wide medical legal investigating system should be established; but with the complexities of living and dying multiplying as they are today, a schema of professional and technical training should be instituted and trainees should be available for employment before a new code establishes higher standards of operation. Currently, not enough trained personnel is available to meet the staffing requirements of any state-wide reorganization.

The legal basis for the coroner's system in California rests upon our dedication to state and county home rule. In four charter counties—Santa Clara, San Mateo, Los Angeles and Sacramento—and in the consolidated City and County of San Francisco, the coroner is appointed after civil service examination. The entire staff in Los Angeles County has been under civil service since 1913. In 53 counties, however, a coroner is elected and in many counties the officer is compensated on a fee basis. The state law provides an optional consolidation of the office of coroner with certain other county offices, most commonly those of public administrator and sheriff. Fifty-two counties have exercised this option: 40 of California's counties have combined the coroner's office with that of public administrator, 11 combined it with sheriff, and one combined it with the office of district attorney.

In each county there are varying qualifications specified for one who may be appointed or elected as coroner. The rate and mode of compensation is determined locally, but the coroner is charged with his duties under the state law. Consequently he is not required to apply for a local court order to authorize an investigation or to seek the permission of other law enforcement officials to obtain possession of the body of a decedent, nor is he required to call witnesses. He has jurisdiction and the law directs him to cause an investigation to be made.

Basically, the coroner in California is an administrator with the authority to obtain the services of such specialists as he may need to carry out the laws governing and stipulating his duties. Although a county officer, he is by no means confined to the borders of his county in obtaining such special services as he may find necessary. He may arrange with laboratories and specialists in other counties or cities to make analyses and, if necessary, he may go outside the confines of the state to obtain consultation. The fees due for any such work become a charge on the county involved and are payable by the county board of supervisors.

It is estimated that California coroners order autopsies in approximately 50 per cent of the cases that come under their jurisdiction. This rate, of course, varies greatly between counties. A few report that they conduct autopsies on all referred cases; the larger counties, having full-time autopsy surgeons on their staffs, have more facility and economy in this regard than smaller counties. In rural areas there is generally a panel of doctors who rotate on call. Some counties have standing arrangements with specialists on the staffs of county hospitals or other local institutions to provide assistance and consultation. An increasing number of counties now have laboratory facilities and a pathologist or pathologists on the county payroll. Several counties have made pathological and laboratory facilities available through the county hospital and the coroner arranges for such work as he needs it. Many of the smaller counties that do not have such equipment and personnel available within the county send their material to outside laboratories as a regular routine. The University of California Medical School and Stanford University School of Medicine give some assistance. The State Crime Laboratory in Sacramento provides service for many counties. Some counties contract with private laboratories and one county, Solano, reports that it receives expert assistance from the medical department of the Navy station located within its confines.

Currently, the coroners of most counties avail themselves of expert help and consultation in one or several phases of their work. The amount of work that is referred to the coroner's office is often out of proportion to the size or population of the county. Alpine County has about 400 persons and almost no coroner's cases, Del Norte County has slightly over 18,000 population and between 35 and 40 cases per year, while Los Angeles County with some 6,000,000 people has coroner's cases running well into the thousands. San Francisco with a far lower population (700,000) has a much higher percentage of cases referred to the coroner's office, averaging between 2,500 and 3,000 cases per annum, in nearly all of which autopsy is done. There is a growing trend within the state for the larger, more affluent and better equipped counties to assist the smaller counties, not only by providing consultation on low fee or fee-free basis, but also by helping them to raise their standards in many ways.

The coroners of the state are organized and through their organization have not only improved the quality of the work done by their offices but have been able to influence state legislation in their behalf. The California Medical Association, with its well developed organization, has also been actively interested in the medical-legal problem and has repeatedly adopted resolutions for the enactment of a uniform and efficient state-wide system. It was partially through the efforts of the California Medical Association that the 1953 California State Legislature created a fact-finding interim committee. In that year there were 110,023 deaths in the State of California, of which 84,162 were certified by physicians and 25,861 by coroners. Some 33,000 autopsies were performed, 19,000 were performed on a private basis by permit and 14,000 by coroner's offices. Of the 14,000 autopsies by coroners, about half were done in Los Angeles, Alameda and San Francisco counties. In Alameda and San Francisco counties autopsy was done in almost all coroner's cases, while in Los Angeles County it was done in about 40 per cent of such cases.

San Francisco City and County Hospital, 22nd Street and Potrero Avenue, San Francisco 10.

An Approach to Biliary Tract Operations

H. C. DAHLEEN, *M.D.*, C. A. SHORT, JR., *M.D.*,
and V. F. VAN DALSEM, JR., *M.D.*, San Jose

• **By changing the position of the patient and of the operating team and by using a right-angle incision, superb exposure of the right upper quadrant abdominal contents can be had with little or no retraction by human effort.**

MANY DIFFERENT KINDS of incisions have been suggested for adequate exposure of the contents of the right upper quadrant of the abdomen. One of these, described by Ripstein,[2] entails opening both the chest and the abdomen to expose the common duct widely and with safety. Use of a second and even a third assistant is mentioned in many of the articles on the subject. In surgical procedures carried out by the average surgeon who does not practice in a medical center, the use of even a second assistant is usually prohibited by economic factors.

We have been pleased by the superb exposure of the extra-hepatic biliary tract offered by a combination of changes in the usual approach that we have been using for the past several years. One of the changes is to place the patient in a position on the operating table that will gain as much as 5 inches of vertical exposure to the duct areas, as can be seen in Figure 1.

The patient is rolled to the left and a standard pillow is folded lengthwise, compressed as much as possible and placed beneath the shoulders and back. A second pillow is placed between the legs. The rolled or slanted position of the patient is adjusted so that the right side of the coronal plane is elevated enough that this plane makes an angle with the horizontal of about 20 degrees. The table is then "broken" in the middle so the right flank muscles are stretched. The entire table is then tilted headup approximately 10 degrees so that gravity will retract the abdominal viscera toward the patient's left side and toward the feet. The right arm is attached to the anesthetist's "screen" so that the humerus is elevated approximately 90 degrees and the forearm flexed the same. Considerable care must be taken to assure that no traction on the axillary or supraclavicular vessels and nerves occurs. By putting the arm in this position, a slight degree of upward and outward traction is placed upon the right costal margin. This adds to the exposure available through the right angle incision to be described.

The depression brought about in the abdomen directly over the common duct area (Figure 1) is the equivalent of having brought the common duct anteriorly the same distance. In addition, the position seems to permit the duodenum and common duct to slide medially and appear as if they were on top of the spinal column. With the patient in this position and traction maintained mechanically, one surgeon by changing his place at the operating table can carry out the operation almost without assistance.

Often in descriptions of cholecystectomy technique the surgeon is advised to avoid the awkward position that otherwise would be necessary by moving from the right side of the table to the left to palpate the anatomic structures in the hepatoduodenal ligament. With the position herein described, this shifting from side to side is obviated,

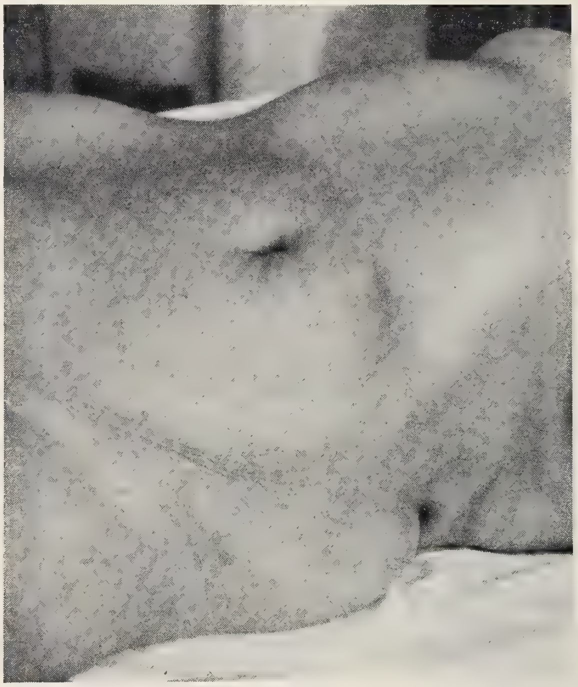

Figure 1.—An obese patient in the left semilateral cholecystectomy position. Note the pronounced depression just below the right costal margin. It is this depression, caused by sagging of the viscera to the left and caudally, that in effect brings the common duct area close to the abdominal wall.

Submitted February 2, 1960.

for the entire operation is done from the left side, the surgeon standing in a natural and relaxed position and looking directly at the junction of the common and cystic ducts. Moreover, because gravity supplies a gentle tug upon the duodenum and tends to roll it over the anterior surface of the spinal column, while the colon and small intestine sag toward the left ilium, it is not necessary to have an assistant holding constant and accurately placed traction on the common bile duct and duodenum.

The subcostal, the right upper quadrant muscle-splitting incision, and the hockey stick incision have been used most commonly for gallbladder operations. Any of them may be used with the patient in the position just described. In 1953 Holman[1] advocated the use of the Kehr incision, which comes very close to providing the ideal exposure of the extrahepatic biliary tree. We have found that the right-angle incision in the right upper quadrant gives the best exposure with the least amount of human assistance. Usually the incision is begun just lateral to the lateral border of the right rectus sheath at the level of the tip of the tenth rib and then is extended medially to a point just short of the midline. Opening is made into the abdominal cavity for manual exploration. If any contraindication to the initially planned procedure is observed at that stage, the second limb of the incision need not be made.

If after exploration the surgeon decides to continue, the vertical skin incision is made directly in the midline, starting from the medial end of the completed transverse incision and extending upward to the tip of the xiphoid process. A long strand of heavy retention silk is placed through the fascia at the projecting corner of the upper flap created by the incisions. A weighted vaginal retractor is tied to this suture approximately 5 inches from the "corner." The corner is lifted vertically slightly and then drawn upward in a direction such that the heavy silk bisects the base of the flap triangle. The use of this weighted retractor provides a wide opening through which the surgeon may operate with no other abdominal wall retraction required. A laparotomy pad is used to hold the hepatic flexure area of the transverse colon out of the operative field. After the stomach has been emptied of its gaseous and liquid contents through a nasogastric tube, a second pad is used to pack it toward the left. In many patients the common duct will lie almost flush with the abdominal wall and sometimes flush with the skin on the left side of the incision. Common duct operations and cholecystectomy are greatly facilitated by the above described incision, and the position of patient and surgeon.

Accurate closure of this abdominal incision is important. The tension on the flank musculature is released by straightening the surface of the operating table, no change being made in the general slope toward the foot of the operating table, lest the viscera ascend enough to make the closing of the abdomen difficult. Then the weighted retractor which has been holding the upper flap is lifted and pulled across the abdominal wall so that the heavy silk suture lies toward the left and somewhere in the area of the anterior superior spine of the left ilium. With the weight drawing the upper skin flap into approximate anatomic position, the fascial structures of the right-angle corner are approximated with a single figure-of-eight suture of 2-0 silk. Closure of the abdominal wall may be done in any fashion that suits the surgeon.

This procedure has been used to provide excellent exposure for pancreaticoduodenectomy. With the patient turned toward the right and a left upper quadrant right angle incision, admirable exposure for splenectomy can be obtained. We have used and modified the procedure over a period of more than ten years with no incident of wound complication other than the kinds that occasionally follow any operation.

San Jose Medical Clinic, 45 South Seventeenth Street, San Jose 12.

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CASE REPORTS

Surgical Correction of Traumatic Partial Separation of Ventricular Septum

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FREQUENTLY in blunt trauma to the chest the heart is injured. One of the lesions produced by a blunt force may be single or multiple ventricular septal defects or traumatic separation of the ventricular septum from its anterior attachment. The following is a report of the diagnosis of a traumatic partial separation of the ventricular septum and surgical repair with the heart open and a heart-lung machine used to maintain circulation.

REPORT OF A CASE

The patient, a 19-year-old boy, was in excellent health until June 28, 1959, when the car he was riding in hit a telephone pole. He was thrown from the back seat to the front seat, hitting his chest against the dashboard of the automobile. He was admitted to Kaiser Foundation Hospital and there remained unconscious for 88 hours. Upon examination soon after the accident no fractures or other injuries were noted. Heart sounds were normal. Six days later on July 4, 1959, severe dyspnea, tachycardia and cyanosis developed suddenly. At this time a right ventricular lift and an apical thrust at the fifth intercostal space 1 cm. lateral to the midclavicular line were noted. There was a thrill along the left sternal border, most pronounced at the third intercostal space. A grade VI, harsh, pansystolic murmur was heard over the entire precordium with maximum intensity at the left third intercostal space with radiation to the apex and base of the heart. The second pulmonic sound was louder than the second aortic but was normally split. A very short, early, minimal diastolic murmur was heard at the left third intercostal space. Blood pressure was 115/70 mm. of mercury. An electrocardiogram showed sinus tachycardia and evidence of anteroseptal injury and anterior wall ischemia. X-ray films of the chest showed bilateral infiltration of the lung fields and moderate cardiac enlargement. Because of the severe pulmonary congestion and left heart failure, tracheotomy was done. Digoxin and diuretics were administered. The patient gradually improved, the tracheotomy tube was removed and he was sent home on August 8, 1959. Rest, low salt diet and digoxin were continued at home. Despite this medical regimen, walking around the house produced dyspnea.

Three weeks later, on August 27, a right heart catheterization was performed at Cedars of Lebanon Hospital and the following data were obtained:

Station	Pressure (mm. of Hg.) Systol./Diastol.	Oxygen Saturation (Vol. Per Cent)	Oxygen Saturation Per Cent
Superior vena cava	5/3	12.3	71.6
Right atrium	7/3	Low 12.5 Mid 12.3	72.4 71.6
Right ventricle	74/12	Body 13.8 High 15.8	80.2 91.7
Main pulmonary artery	66/27	14.5	84.2
Right pulmonary artery	....	14.6	85.1
Right and left peripheral pulmonary artery	18/13	....	....
Right brachial artery	....	16.2	94.0

Systemic blood flow	6.4 liters per minute
Pulmonary blood flow	16.8 liters per minute
Left to right shunt	10.4 liters per minute

He was then referred to us for operation and on November 17, 1959, he was admitted to St. Vincent's Hospital, Los Angeles, for an open heart procedure. Physical findings were essentially the same as those previously reported. Thoracic x-ray films showed grade II cardiomegaly, with a configuration indicating considerable right-sided enlargement involving the right atrium as well as the right ventricle. Left ventricular enlargement was not as pronounced. There was decided prominence of the main pulmonary artery and its hilar branches, and a grade III increase in the vascularity of the lungs. The small vessels formed a gross reticular pattern which was secondary to the pulmonary hypertension. An electrocardiogram was consistent with left ventricular hypertrophy. Hematological

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From the Department of Surgery of the University of Southern California School of Medicine, St. Vincent's Hospital and the Los Angeles County General Hospital.

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Submitted March 24, 1960.

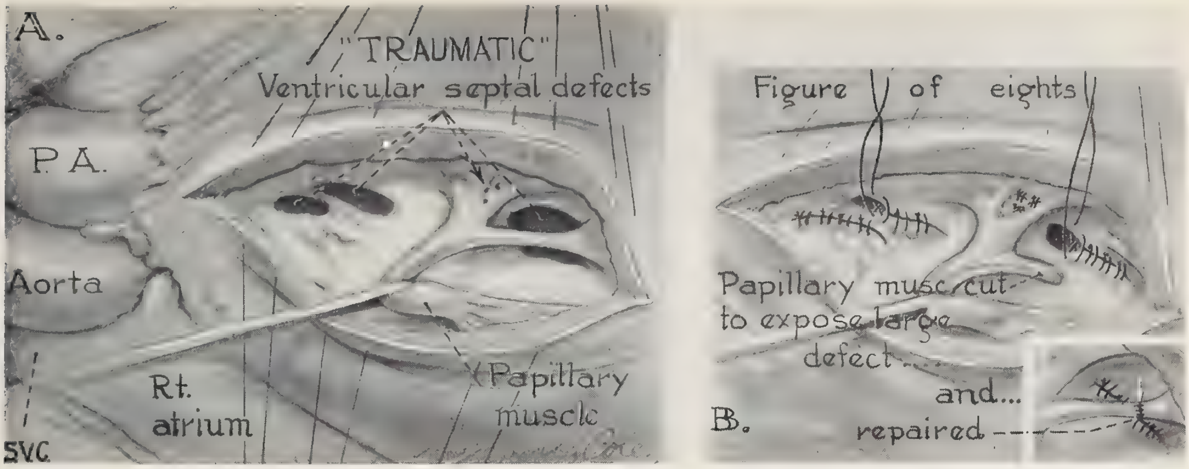

Figure 1.—*Left:* Ventricular septal tears as seen through an incision in the right ventricle. *Right:* Technique of repair with large figure of eight sutures of heavy silk.

examination and urinalysis were within normal limits.

On November 24, operation was performed with circulation and oxygenation of the blood maintained by use of a Kay-Anderson autoclavable, stationary screen oxygenator.[9] A median sternotomy incision was made. A grade VI pansystolic thrill was palpable over the entire right ventricle. The left superficial femoral artery was cannulated for recording pressures. The right common femoral artery was cannulated to return oxygenated blood to the patient. Both cavae were cannulated through the right atrium. Cardiopulmonary by-pass was begun and the right ventricle was opened.

There were four distinct ruptures in the ventricular septum; but only two were seen at first. One, 1 cm. long, was located at the anterior portion of the septum near its origin from the anterior part of the ventricle 3 cm. from the pulmonary valve, and the other, 2 cm. long, was immediately beneath the first one. They were repaired with interrupted figure eight sutures of No. 0 silk and, in the belief that they were the only lesions present the surgical incision in the ventricle was closed and cardiopulmonary by-pass was discontinued. However, when a grade III to IV pansystolic thrill persisted in the lower portion of the right ventricle, cardiopulmonary by-pass was reinstituted and the right ventricle was reopened. After extensive search the two remaining traumatic tears were found. One of them, 5 mm. in diameter, was a third of the way from the apex of the heart and the other was so hidden behind the papillary muscle of the tricuspid valve that to repair it necessitated cutting half of the insertion of the papillary muscle (Figure 1). The defects were closed with interrupted sutures of heavy silk placed in a figure eight fashion. The incised papillary muscle was sutured with interrupted 2-0 silk. The by-pass was discontinued for the second time and there was then only a faint grade I thrill palpable over the right ventricle, which was ascribed to small leaks through the suture holes. The chest was closed. The postoperative condition of the patient was uneventful, except for slight hepatomegaly on the seventh postoperative day, which subsided promptly when diuretic therapy was administered. The patient was discharged from the hospital two weeks after the operation with prescription of a low salt diet, digoxin and diuretics.

DISCUSSION

In 1935 Bright and Beck[1] summarized the postmortem observations in 152 cases of cardiac rupture due to nonpenetrating injuries to the heart. Eleven traumatic tears in the ventricular septum and one in the atrial septum were noted. East[4] reported a traumatic rupture of the ventricular septum, diagnosed clinically, in a nineteen-year-old man. Operation was not done and the patient appeared to be doing well three and a half years after the injury. The first case of traumatic ventricular septal defect proven by cardiac catheterization was reported in 1953 by Guilfoil and Doyle.[7] The patient in that case was reported upon by Campbell, Vernier, Varco and Lillehei[2] who noted no changes in pulmonary artery pressure when right heart catheterization was carried out again five and a half years later.

Pollack, Markelz, and Shuey[13] reviewed 12 cases of traumatic ventricular septal defects in the literature and added a report of a case proven at autopsy. In 1958 Inkley and Barry,[8] French and Fowler[6] and Carey, Hurst and Arentzen[3] reported a case of traumatic rupture of the ventricular septum due to blunt force, the diagnosis substantiated by cardiac catheterization. Operation was not done in any of these cases.

The first successful repair of a traumatic ventricular septal defect with the heart opened by surgical incision was that of a 13-year-old boy who was operated on in 1955 with heterologous lungs used to maintain oxygenation. This was reported by

Campbell, Vernier, Varco and Lillehei.[2] Peirce, Dabbs and Rawson[12] in 1956 successfully repaired a rupture of the ventricular septum by open cardiotomy with a patient under mild hypothermia and without a heart-lung machine. In the same year, Mahaffey, Schramel and Creech,[11] using a bubble type oxygenator, repaired a perforation of the ventricular septum produced by a penetrating stab wound. In 1960 Feruglio, Bayley, and Greenwood[5] summarized the literature and reported a case of nonpenetrating chest injury resulting in isolated rupture of the ventricular septum and angina pectoris with surgical repair of the septal rupture.

The tear in the ventricular septum is probably most likely to occur when external force is applied to the heart during diastole or early systole. At this time the ventricles are full of blood and traumatic compression of the ventricular wall, with the tricuspid and mitral valves in closed position, allows for little or no relief of pressure, for the blood cannot flow in a reverse direction into the atria. Therefore with blunt trauma the sudden elevation of the intraventricular tension in the full ventricles with force applied to the outflow tracts may cause traumatic rupture of the septum or even rupture of the ventricles. This has been emphasized by Inkley and Barry.[8]

SUMMARY

A case of traumatic separation of the ventricular septum with surgical correction by operation upon the open heart is presented. In this patient early operation was indicated due to the moderate cardiac enlargement, cardiac failure, symptoms with minimal exertion and moderate pulmonary hypertension.

2122 West Third Street, Los Angeles 57 (Kay).

ADDENDUM: Patient is now back at work eight hours daily and feels perfectly normal. He no longer is on digoxin or other medications and is on regular diet and normal activity.

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EDITORIAL

Medicine and Allied Health Professions

"Physicians are under increasing pressure in this explosive era of medical progress to apply the principles of science to the care of their patients."

This sentence, buried in the language of an extensive report by a committee of the Board of Trustees of the American Medical Association, states in simple language a fact that is emerging with increasing clarity and force from the surge of scientific activities throughout the world today.

The questions posed to the committee by the A.M.A. Trustees revolved around the fact that today's physician, if he is properly and adequately to serve his patient, must call on a large group of allied scientists for help. The committee's job was to review this entire question, analyze the forces and talents involved and make recommendations for harnessing the whole field of science in the interest of the patient.

That the committee did a thorough and scholarly job is attested in a review of its report.* Indicative of the scope of the study are the simple figures that in 1958 there were two and one-half times as many Ph.D.'s as M.D.'s engaged in teaching and research in the "basic medical science departments of anatomy, biochemistry, microbiology, pharmacology and physiology." In addition, the study states that "it is estimated that there are already some eight individuals in allied health activities for each physician engaged in patient care."

Figures such as these emphasize the fact that the physician sees and treats the patient but that he must surround himself with allied professions if he is to give the best of scientific care to the patient.

The A.M.A. has taken the lead in studying this growing phenomenon and suggesting an orderly method by which the special talents of each professional or technical group may be classified, evaluated and combined into a smooth-working team for the benefit of the health of the people. Such a study, in the minds of many thinking physicians, is long overdue.

It is easy for the practicing physician to think about nurses, the pharmacists and laboratory assistants as members of the health care team that serves his patients. But, in addition to these individuals, there are some fifty additional groups that provide some measure of services which contribute to the total picture of medical care. The committee report lists a number of such groups, including electrologists, masseurs, medical technologists, midwives, opticians, optometrists, podiatrists, psychologists, physical therapists and others. While many of these groups, each with its own talents and functions, may not readily come to the mind of the physician, each of them is an entity in the health picture today and each must be recognized in this light.

Some of these allied professions are today regulated by law, notably pharmacists and nurses. Some are required to secure a state license in order to practice their professions, even as physicians must do. Others may practice after the formality of registration based on acceptable credentials. Still others come under no statutory regulation and thus may set themselves up in practice by complying only with local police regulations covering business establishments.

In view of the variety of methods by which the allied professional groups may enter practice, and in view of the constantly increasing place they are making for themselves in the eyes of the public, the A.M.A. committee report calls for the need of recognition, understanding and, if advisable, cooperation between the medical profession and the other groups. This recommendation is based on the fact that the physician has the ultimate responsibility for the health care of the patient but that many others may be able to make valuable contributions to that care.

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*Copies may be obtained by writing to John Hinman, M.D., secretary of the Committee on the Relationships of Medicine with Allied Health Professions and Services, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois.

This philosophy would call for a stop to the possible fragmentation of medical care and the employment of allied skills in excess of their true worth. It would also call for a recognition by all groups involved of the skills possessed by each and the cooperation of all worthwhile groups for the ultimate and maximum good of the patient.

Since the physician is vested with final and complete authority in the field of health care, he should assume the leadership in accomplishing these objectives. He must recognize and respect the talents and the contributions which others may make for the benefit of the patient. In turn, he may reasonably expect the others to show this same recognition for his talents and responsibilities.

While the recommendations of this committee are necessarily couched in general terms, they may be boiled down to a few specifics. In short, they call for recognition, study, training, utilization and cooperation by all professional and technical groups. They ask that a program be undertaken to reach these goals and that the medical profession take the lead in this program.

Obviously, a plan of this type constitutes long-range planning which may well be beset by innumerable difficulties. What is hoped for is a gradual meeting of the minds between all these health professions, aimed at the better care of patients. If, in the process, some groups emerge as worthless or as overlapping into other fields, some changes may occur in the recognition and training of such groups. If mergers between contiguous groups are indicated, such mergers could be accomplished for the good of the patient.

The facts that three years have gone into this preliminary study and that more than 150 representatives of allied health groups were consulted in the process indicate the scope of the problem, as well as pointing to the long-range nature of the program envisaged by this committee.

For a provocative and timely report on the elements of the best in medical care for all the people, this scholarly study is recommended reading. Fortunately, the Board of Trustees of the A.M.A. plans to keep this committee and its subject matter alive and active.

Letters to the Editor...

The Malignant Effect of Premature, Mass Publicity Concerning Factors Causing Malignant Disease

THINGS LIKE last year's nationwide publicity concerning cranberries and stilbestrol-fed chickens and the continuing controversy concerning the carcinogenic effect of cigarettes are rapidly changing the United States into a nation of frightened people, many of them ridden by tyrannical—and to a large extent unjustifiable—anxiety and fear. These two emotions per se will shorten the lives of millions and very likely actually kill thousands. Every clinician knows that fear and anxiety increase the incidence of cerebrovascular accidents and aggravate a host of otherwise reasonably well-compensated organic illnesses.

The wise physician does not tell his patient everything—certainly not *all* the technical truths concerning for example, a rise of blood pressure, since to do so would aggravate a condition he is seeking to alleviate.

Just as an individual may request complete candor and the total truth from his physician, so may a curious and enlightened public. However, in some circumstances truth and candor, despite the request are not really wanted at all, for no one wishes to have knowledge that can only lead to a feeling of hopelessness. So even in the case of the most serious and desperate clinical conditions the patient is entitled to receive a prognosis which includes the element of hope, and the best thinkers are agreed that this soul-saving loophole must be presented to the sick, the troubled and even the dying. This dictum, far from being hypocritical or dishonest, embodies in it the very essence of the physician's credo, since it is not only his duty to prolong life, but also to alleviate human misery.

In a way, the public, which by and large receives medical information from newspapers, magazines, radio and television, is a captive audience. If the source of medical information bears the authenticity emanating from authoritative figures, it will create a profound effect in the minds and feelings of the recipients. A trusting child will accept almost any idea from a conscientious and loving father. The child is not only incapable of being judgmental, but does not wish to be, since he prefers to try to retain his feelings of the omnipotent and omniscient parent. The public who are exposed to medical propaganda, although they be adult, usually feel, and have a right to feel, very much the same way about their nation's medical leaders.

There is no question that there are often unavoidable and legitimate differences of opinion, even among authoritative experts. But when these differences or even diametrically opposed opinions exist, they should either be reconciled between the parties concerned or, if this be impossible, conflicting opinions should not be widely disseminated either simultaneously or separately within the span of a few weeks. To do so is to arouse confusion, dispel confidence and engender distrust in the sources of information which most people wish to regard as unassailable. Last year's questionably valid publicity about cranberries, and the even more recent and debatable scare about stilbestrol-fed chickens almost certainly will do more harm than good.

The tremendous anxiety about cigarette smoking in relation to bronchogenic and lung cancer has had a profound effect on millions of smokers for the past five years. The conflicting evidence presented in December, 1959, by the Surgeon General of the Public Health Service, Dr. Leroy Burney, and Dr. John H. Talbott of the *Journal of the American Medical Association*, leaves the public completely at a loss as to whether to start smoking, to reduce their smoking or stop smoking.

Again, let it be said that such differences of opinion are often inevitable and even desirable, but just as mother and father differ in their admonitions and ideas about restricting a child, the differences can only do the child harm if presented to him; they should be settled or suppressed without his awareness. It does not seem fair or humane to confront any human being with an anxiety-provoking dilemma, that he is quite incapable of solving.

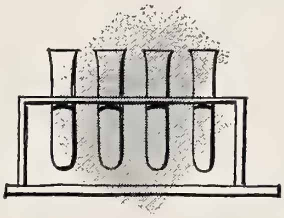
The adult public when forced to be conversant with widely differing opinions that he is incapable of appraising, feels deserted and unprotected. These feelings in turn become complicated by fear and anger, which to a great degree could be avoided by more judicious and discriminating decisions concerning the appropriateness, and particularly the timing, of information which even if noncontroversial will be difficult for many to understand and even more difficult for many more to accept without terror. We humans cannot always avoid anxiety and sometimes, even panic. But, it seems almost inexcusable to add to these burdens of human existence unless the benefits far exceed the harm.

The philosophy of medicine is just as important as the science of medicine. How comfortably people live is as important as how long they live. It has been said that if we had a choice most of us would take a shorter life relatively free from terror in preference to a longer life fraught with overpowering anxiety.

It seems to me that the best way of regulating the enunciation of medical propaganda in general, particularly information about carcinogenic agents, would be by the following plan: A committee closely affiliated with the President of the United States possibly headed by a cabinet member having to do with the health of this nation, should take the responsibility for the quality, quantity and timing of information reaching most of the population of this country. Such a committee might well be composed of the Surgeon-General of the United States Public Health Service, the editor of the *Journal of the American Medical Association*, a physician who is recognized as an expert on malignant disease, an authority on industrial medicine and at least one top-flight psychiatrist. From the accumulated wisdom of such men and the meeting of these minds, the American public would receive more accurate and less controversial reports and would thereby be spared much of the fear that now overwhelms some persons.

MARK LEWIS GERSTLE, M.D.

Sacramento



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 460th Meeting of the Council, San Francisco, Hilton Inn, June 4, 1960.

The meeting was called to order by Chairman Sherman in the Hilton Inn, San Francisco International Airport, on Saturday, June 4, 1960, at 9:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, O'Connor, Shaw, Rogers, Gifford, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall. Absent for cause, Councilor Kirchner.

Present by invitation were Doctors Batchelder and Miller and Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Edwards and Bowman of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; county executives Scheuber and Hackett of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Bannister of Orange, Bailey of Tulare, Brayer of Riverside, Donmyer of San Bernardino, Neik of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, Donovan of Santa Clara, Funk of Solano, and Blankfort of Marin; Dr. A. E. Larsen and Messrs. Paolini and Lyon of California Physicians' Service; Dr. Malcolm Merrill, State Director of Public Health; Dr. Daniel Blain, State Director of Mental Hygiene; Mrs. Eunice Evans and Dr. John Keye of the State Department of Social Welfare; Dr. E. B. Howard, Assistant Executive Vice-President of the American Medical Association; Doctors Robert Holmes, Frank Healey, Owen Thomas, James Moore, J. Lafe Ludwig, Dan O. Kilroy, Clyde Boice, Donald Harrington, Packard Thurber, Jr., Malcolm Watts, John Schaupp and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 459th meeting of the Council, held April 23 and 24, 1960, were approved.

2. *Membership:*

(a) A report of membership as of June 2, 1960, was presented and ordered filed.

(b) On motion duly made and seconded, 407 delinquent members whose dues have been received, were voted reinstatement.

(c) On motion duly made and seconded in each instance, nine members were voted Retired Membership. These were: Homer A. Rue, Butte-Glenn County; Belle Wood Comstock, William J. Norris, Ann Dumont Staatz, Los Angeles County; William L. Howell, San Diego County; John M. Graves, Millard Reed Ottinger, San Francisco County; Charles R. Caskey, Curtis M. Galt, San Joaquin County.

(d) On motion duly made and seconded in each instance, 17 applicants were voted Associate Membership. These were: Allan J. Gherini, Henry A. Renteln, Carl D. Wells, Alameda-Contra Costa County; James A. Gonner, Patricia H. Henderson,

PAUL D. FOSTER, M.D. . . . . President
WARREN L. BOSTICK, M.D. . . . . President-Elect
JAMES C. DOYLE, M.D. . . . . Speaker
IVAN C. HERON, M.D. . . . . Vice-Speaker
SAMUEL R. SHERMAN, M.D. . . Chairman of the Council
RALPH C. TEALL, M.D. . . Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D. . . . . Secretary
DWIGHT L. WILBUR, M.D. . . . . Editor
HOWARD HASSARD . . . . Executive Director
JOHN HUNTON . . . . Executive Secretary
General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400
ED CLANCY . . . . Director of Public Relations
Southern California Office:
2975 Wilshire Boulevard, Los Angeles 5 • DUnkirk 5-2341

Fred C. Tongue, Fresno County; John T. Burroughs, Alma C. Corn, Geraldine J. L. Dickinson, Johnette G. Ensign, Allan I. Mann, Clyde H. Nelson, Los Angeles County; Roswell Fine, Marin County; Wayne C. Mercer, San Francisco County; Jaime Amselem-Benmaman, Robert Van Bruggen, Santa Clara County; Jon L. Karlsson, Sonoma County.

(e) On motion duly made and seconded, 20 members were voted a reduction in dues because of illness or postgraduate study.

3. *Committee on Blood Banks:*

Dr. James Moore, chairman, and Dr. Owen Thomas, member of the Committee on Blood Banks, presented a resolution which had been adopted by the committee and by the California Blood Bank System and requested that it be referred to the California delegation to the American Medical Association for consideration. On motion duly made and seconded, it was voted to approve this resolution and refer it to the A.M.A. delegation for consideration.

(The resolution asked that A.M.A. representatives on the national Joint Blood Council be selected from physicians with a direct interest in and knowledge of blood banking.)

4. *Standardization of Joint Measurements:*

Dr. Packard Thurber, Jr., member of the Subcommittee for Standardization of Joint Measurements, presented a copy of the revised edition of the manual "Evaluation of Industrial Disability" and requested that the revisions be published in CALIFORNIA MEDICINE. On motion duly made and seconded, this request was referred to the Editor.

Dr. Thurber also requested that this subcommittee be maintained for further study and recommendations in the field of industrial disability. On motion duly made and seconded, it was voted to refer this request to the Committee on Committees.

5. *Legislation for Health Care of the Aged:*

The chairman introduced Dr. E. B. Howard, assistant executive vice-president of the American Medical Association, who reported on the status of federal legislative proposals to provide health services for the aged population.

Dr. Clyde Boice of Santa Clara County and Dr. Elmer Gooel of Los Angeles County discussed proposals for such care which had been advanced and approved in their respective county medical societies.

Dr. Donald Harrington presented a resolution which the Commission on Medical Services proposed for presentation to the A.M.A. House of Delegates.

Dr. J. Lafe Ludwig, member of the A.M.A. Committee on Legislation, reported on the overall picture of federal legislation in the field of health care and pointed out that of 19 health bills approved by Congress in 1959, the A.M.A. had supported 14.

The chairman referred all these presentations to a special committee under the chairmanship of Councilor Todd, with instructions to review these proposals and report back at a later hour.

Dr. Todd's committee reported later in the day and the following actions were taken:

1. On motion duly made and seconded, the resolution presented by Dr. Harrington was voted approval and referred to the California delegation to the A.M.A. for introduction in the A.M.A. House of Delegates.

2. On motion duly made and seconded, the proposals advanced by the Santa Clara County Medical Society and the Los Angeles County Medical Association were voted referred to the Commission on Medical Services for consideration and report to the Council.

6. *Report of the President:*

President Foster presented a resolution which he proposed be introduced into the A.M.A. House of Delegates, to encourage added emphasis on the recruiting of potential physicians from the science students in undergraduate schools. On motion duly made and seconded, the resolution was approved and referred to the delegation to the A.M.A. for introduction in the A.M.A. House of Delegates.

Dr. Foster also suggested that the advance agenda for Council meetings be expanded with the addition of explanatory material.

Dr. Foster also suggested that a history of the California Medical Association be written. After discussion, on motion duly made and seconded, it was voted to appoint a committee to look into the feasibility of preparing such a history. The chairman named Dr. Teall, chairman, and Doctors Quinn and Rogers as members of this committee.

7. *Financial:*

Chairman Heron of the Finance Committee presented a report of current cash balances, which was ordered filed.

Dr. Heron also reported that all bank loans had been paid by using interfund borrowing. Additional loans will be needed from the banks later in the year.

Dr. Heron also reported that the Los Angeles Physicians' Aid Association has now requested that a loan of $50,000, authorized by the Council in 1959, at an annual interest rate of 2½ per cent, be consummated. Legal counsel is working on this as to security to be provided for the loan.

Dr. Heron also reported that several officers and members of the Association were being called upon to devote considerable time to the work of the Governor's Committee for the Study of Medical Aid and Health and that the Finance Committee had voted to recommend to the Council that these members be allowed the officers' per diem ($100) for these activities. On motion duly made and seconded, it was voted to approve this proposal.

8. *California Medicine:*

Editor Wilbur called upon Mr. Hunton to present a series of articles which the Pharmaceutical Manufacturers' Association had presented for publication in CALIFORNIA MEDICINE. On motion duly made and seconded, it was voted to accept these articles for publication, subject to editorial revisions.

9. *Committee on Committees:*

Chairman Bostick of the Committee on Committees presented a list of recommendations for changes in commission and committee members, creation of new committees and additions to existing committees. On motion duly made and seconded, this list, as appended to these minutes, was approved.

10. *Committee on Public Relations:*

Chairman Malcolm Watts of the Committee on Public Relations reported that the Subcommittee on Television, Motion Pictures and Radio had prepared an outline of a series of television productions and that a maximum budget of $81,000 for this purpose had been approved by the subcommittee, the parent committee and the steering committee appointed by the Council, the budget to be subject to review and reconsideration periodically.

Dr. Watts also reported that the committee had approved the inclusion of medical economic material in *Newsletter*, including as many as six additional issues annually devoted to medical economic topics.

He also presented a draft of material to be published as a public relations brochure.

On motion duly made and seconded, Dr. Watts' report was accepted, including approval of the proposals outlined above.

11. *Ad Hoc Committee on Scientific Activities and Continuing Education:*

Dr. Wilbur gave a progress report for the ad hoc Committee on Scientific Activities and Continuing Education, including reports on the fields being reviewed by subcommittees in the fields of (1) Annual Sessions, (2) Postgraduate Activities, and (3) CALIFORNIA MEDICINE. He stated that further reports would be made later in the year.

12. *Committee on Social Security Poll Format:*

Dr. Doyle, chairman of the special Committee on Social Security Poll Format, presented the revised format developed by the committee following its meeting of April 24, 1960, and recommended that the Council approve it for availability to those county societies which wish to use it. On motion duly made and seconded, this format, with revisions, was approved for availability to those county medical societies which wish to poll their members as to their wishes for inclusion under the Social Security laws.

13. *Liaison Committee to State Department of Social Welfare:*

Dr. Quinn reported that the program for social welfare recipients was going well and that funds are available for possible added services. One such addition is under study through a pilot program to provide dental care for recipients under age 17.

Dr. Quinn also reported that consideration was being given to the inauguration of routine health evaluation examinations for the elderly and that a committee on drugs was holding further meetings to stabilize the policies on drugs which may be provided under the program.

Mrs. Eunice Evans of the State Department of Social Welfare thanked Doctors Sherman and Quinn and others for their contributions to the health care program. She reported that the Department of Social Welfare has received a grant of $50,000 for a research inquiry into the possibility of a coordinated program of total care of the aged, including medical care, nutrition, recreation and other factors.

Mrs. Evans also announced that the Governor's Conference on the Aging will be held in October, in advance of the White House Conference on the Aging scheduled for January, 1961.

14. *State Department of Mental Hygiene:*

Dr. Daniel Blain, State Director of Mental Hygiene, reported that a meeting will soon be held with the C.M.A. Committee on Mental Health and that a program would be developed and presented to the Council later.

He also reported that California now has 47,000 mental hospital beds and is annually admitting and discharging about 25,000 patients for a relatively high turnover rate. The department plans, he said, to increase the utilization of beds in a program of moving away from institutionalizing mental patients and toward retaining such patients in the care of private physicians and hospitals.

15. *California Physicians' Service:*

Dr. John G. Morrison reported that as of April 30, 1960, C.P.S. had about 787,500 beneficiary members, compared with about 730,000 a year earlier, and that the number of physician members had also increased. About 10 per cent of the beneficiary members, he said, come under the "C" schedule of fees.

Discussion was held on the delineation of responsibilities and authorities of C.P.S. On motion duly made and seconded, it was voted to urge the liaison committee of the Commission on Medical Services and C.P.S. to meet at the earliest possible date and to bring back a report at the July Council meeting, at which time the feasibility of a joint meeting between the Council and the Board of Trustees of C.P.S. would be discussed.

16. *Commission on Public Agencies:*

A proposal that the Committee on Veterans' Affairs be authorized to be represented on a joint council to represent the various veterans' groups as well as medicine, was presented. On motion duly made and seconded, it was voted to authorize this participation by the Committee on Veterans' Affairs.

17. *Commission on Community Health Services:*

Dr. MacLaggan presented a format for use by the Joint Council for Health Care of the Aged in evaluating nursing homes. On motion duly made and seconded, the format was approved for a survey of nursing homes.

On motion duly made and seconded, it was voted to name two representatives of the Association as members of an accrediting committee on nursing homes, the Committee on Committees to provide the names of such representatives.

Dr. MacLaggan stated that the Committee on Traffic Safety wished to have the county societies establish local traffic safety committees, the duties of such committees to be the training of ambulance drivers in accordance with new state legal requirements and decisions reached by the House of Delegates. On motion duly made and seconded, it was voted to request the county societies to establish such committees.

Dr. MacLaggan also reported that several resolutions from the 1960 House of Delegates had been assigned to subcommittees for study and later report.

18. *Commission on Cancer:*

Dr. Davis reported that the Commission on Cancer was proceeding to outline the areas of responsibility of the several subcommittees now established under the commission.

19. *Staff Report:*

(a) Mr. Hassard requested Council action on proposals made earlier by the staff for standard procedures to be used in Annual Sessions. On motion duly made and seconded, these proposals were approved.

(b) Mr. Hassard also presented a format to be used in arranging and carrying out the visits of C.M.A. officers to the county societies. On motion duly made and seconded, approval was voted for this format.

20. *Legal Department:*

Mr. Hassard reported on proposed changes in the regulations of the State Board of Pharmacy which would, in effect prohibit the employment of pharmacists in any pharmacy which was owned by one or more physicians. He pointed out that medical ethics do not debar the ownership of pharmacies by physicians *per se* but do prohibit the exploitation of patients through such ownership. On motion duly made and seconded, it was voted to authorize legal counsel to advise the State Board of Pharmacy that the Association would consider such changes in regulations in the light of ethical concepts as shown above.

Adjournment:

There being no further business to come before it, the meeting adjourned at 6:35 p.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

* * *

COMMISSION AND COMMITTEE APPOINTMENTS

June 4, 1960

Commission on Community Health Services:

1. **Committee on Allied Health Agencies.** With the approval of the Chairman of this Committee and the Commission on Community Health Services, the Committee on Committees recommends that:
   a. The present membership of the committee be dissolved.
   b. The committee be reconstituted as follows:
      James MacLaggan, chairman, San Diego (1961)
      Thomas Ledwich, Napa (1963)
      Robert L. Smith, Jr., San Francisco (1961)
      Jack Kramer, Inglewood (1962)
      Henry A. Brown, San Mateo (1962)
      Max D. Shaffrath, Sacramento (1962)
      Harold Kay, Oakland (1963)

Commission on Medical Services:

Under a recent Council decision, the composition of all subcommittees of existing standing committees must be approved by the Council. Therefore, the Committee on Committees recommends the following:

1. **Committee on Government Financed Medical Care.** It was voted that the following subcommittees be established.

   a. *Liaison to Medicare and VA Home Town Care Programs.* It was voted to appoint the following for one-year terms:

      John Rumsey, San Diego, chairman
      John Vaughan, Bakersfield
      Ferrall Moore, San Mateo
      A. E. Berman, Sacramento
      J. Lafe Ludwig, Los Angeles
      John G. Morrison, San Leandro
      J. B. Price, Santa Ana

   b. *Liaison to the Department of Health, Education and Welfare.* It was voted to appoint the following for one-year terms:

      Malcolm Todd, Long Beach, chairman
      T. Eric Reynolds, Oakland
      Byron Gifford, Santa Barbara
      Donald Abbott, Riverside
      Ferrall Moore, San Mateo

   c. *Liaison with the Bureau of Vocational Rehabilitation.* It was voted to appoint the following for one-year terms:

      Francis J. Cox, San Francisco, chairman
      Elizabeth Austin, Los Angeles
      Mandel Sherman, Beverly Hills
      William H. Todd, Long Beach

   d. Although the Committee on Government Financed Medical Care now has 12 members, the Committee on Committees recommends that this committee be increased to 13 and that Malcolm Todd be appointed for a term to end in 1962.

2. **Committee on Medical Care Insurance.** The Committee on Committees recommends that a new standing committee be established under the Commission, with the following appointments:

   Donald Harrington, Stockton, chairman (1962)
   Leon O. Desimone, Los Angeles (1962)
   Donald D. Lum, Alameda (1963)
   Milo Youel, San Diego (1961)
   Joseph Telford, San Diego (1963)
   Robert Combs, San Francisco (1962)
   Frank Ham, Van Nuys (1961)

3. That the following subcommittees be established under this new standing committee.

   a. *Committee on Uniform Claim Forms.* It was voted to appoint the following for one-year terms:

      Dudley Cobb, Jr., Los Angeles, chairman
      Joseph Telford, San Diego
      Roy A. Ouer, San Diego
      Leon O. Desimone, Los Angeles
      William F. Wagner, San Francisco
      Albert F. Zipf, Sacramento

   b. *Liaison Committee to the Insurance Industry.* It was voted to appoint the following for one-year terms:

      Joseph Telford, San Diego, chairman
      Wilbur G. Rogers, Glendale
      Clyde Boice, Palo Alto
      Leopold H. Fraser, Richmond
      Robert H. Butler, Santa Rosa

   c. *Committee on Local Medical Society Sponsored Programs.* It was voted to appoint the following for one-year terms:

      John F. Murray, Fresno, chairman
      Robert Combs, San Francisco
      David L. Green, Stockton
      Wilfred J. Snodgrass, Santa Monica
      Robert L. Barmeyer, Long Beach
      Herman Stone, Riverside

   d. *Committee on Miscellaneous Programs.* It was voted to appoint the following for one-year terms:

      Henry Gibbons, III, San Francisco, chairman
      Elwin W. Midgley, Vallejo
      John Benton, Los Angeles
      Frank Ham, Van Nuys

4. *Subcommittee on Industrial Accident Commission.* It was voted that a special subcommittee be established under the Commission with the following members appointed for a one-year term:

   Francis J. Cox, San Francisco, chairman
   H. Dean Hoskins, Oakland
   Leon O. Desimone, Los Angeles
   Packard Thurber, Jr., Los Angeles

Films for C.M.A. Annual Session Film Symposia Requested

The previously successful film symposia presented during the California Medical Association annual sessions will be repeated in 1961, April 30 to May 1.

Daytime symposia, each one to center around one specialty, are now being planned for the physician. General programs for doctors, their wives, nurses and ancillary personnel will be presented during the evenings.

There will be a moderator and outstanding physicians, preferably authors, as discussants on each symposium.

Authors desiring to show their films should notify Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

Deadline: December 1, 1960.

In Memoriam

Abe, Tom. Died in Los Angeles, June 17, 1960, aged 52, of cancer. Graduate of St. Louis University School of Medicine, Missouri, 1934. Licensed in California in 1938. Doctor Abe was a member of the Los Angeles County Medical Association.

◆

Borden, Lemuel Perry. Died in Oakland, June 25, 1960, aged 54. Graduate of the University of Oregon Medical School, Portland, 1932. Licensed in California in 1933. Doctor Borden was a member of the Santa Clara County Medical Society.

◆

Campbell, Robert A. Died in Whittier, June 23, 1960, aged 90. Graduate of the University of Southern California School of Medicine, Los Angeles, 1894. Licensed in California in 1894. Doctor Campbell was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

◆

Chloupek, Tom Vidger. Died in Redlands, June 14, 1960, aged 43. Graduate of the University of Oregon Medical School, Portland, 1950. Licensed in California in 1951. Doctor Chloupek was a member of the San Bernardino County Medical Society.

◆

Ewer, John Norton. Died in Piedmont, June 2, 1960, aged 60, of carcinoma of the pancreas. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor Ewer was a member of the Alameda-Contra Costa Medical Association.

◆

Hanson, George Berdell. Died June 25, 1960, aged 59. Graduate of Northwestern University Medical School, Chicago, Illinois, 1927. Licensed in California in 1927. Doctor Hanson was a member of the Los Angeles County Medical Association.

◆

Hicks, Elizabeth Shreve. Died in Tiburon, June 13, 1960, aged 50. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1937. Licensed in California in 1937. Doctor Hicks was a member of the San Francisco Medical Society.

◆

Johnson, Harold Henry. Died April 17, 1960, aged 65, of arteriosclerotic heart disease. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1919. Licensed in California in 1948. Doctor Johnson was a member of the Yolo County Medical Society.

◆

Marcus, Joseph Harvey. Died in Los Angeles, May 23, 1960. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1929. Licensed in California in 1930. Doctor Marcus was a member of the Los Angeles County Medical Association.

◆

McWhirter, William L. Died June 1960, aged 71. Graduate of the University of Texas Medical Branch, Galveston, 1917. Licensed in California in 1923. Doctor McWhirter was a member of the Alameda-Contra Costa Medical Association.

◆

Pottenger, Robert Thomas. Died in San Marino, July 12, 1960, aged 55. Graduate of Harvard Medical School, Boston, Massachusetts, 1928. Licensed in California in 1929. Doctor Pottenger was a member of the Los Angeles County Medical Association.

◆

Rude, Anna E. Died in San Francisco, June 20, 1960, aged 83. Graduate of Cooper Medical College, San Francisco, 1906. Licensed in California in 1906. Doctor Rude was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

◆

Webster, John C. Died June 15, 1960, aged 70. Graduate of New York University College of Medicine, New York, 1915. Licensed in California in 1921. Doctor Webster was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

Ambassador Hotel
LOS ANGELES

April 30 to May 3, 1961

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted *to the appropriate section secretary* (see list on this page) no later than November 15, 1960.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 693 Sutter Street, San Francisco 2, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than November 15, 1960. (No exhibit shown in 1960, and no individual who had an exhibit at the 1960 session, will be eligible until 1962.)

Medical Motion Pictures

The daytime Film Symposiums which proved so popular during the 1959 and 1960 sessions will be continued in 1961. Evening film programs will be planned for doctors, their wives, nurses and ancillary personnel.

Authors desiring to show films should send their applications to Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Blvd., Los Angeles 5. All authors are urged to be present at the time of showing as there will be time allotted for discussion and questions from the audience after each film.

Deadline: December 1, 1960.

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY . . . . **Gardner S. Stout**
39 North San Mateo Drive, San Mateo

ANESTHESIOLOGY . . . . **Gilbert E. Kinyon**
5252 Chelsea Avenue, La Jolla

DERMATOLOGY AND SYPHILOLOGY . **Paul M. Crossland**
1120 Montgomery Drive, Santa Rosa

EAR, NOSE AND THROAT . . . **Marvin W. Simmons**
1020 East McKinley Avenue, Fresno

EYE . . . . **Floyd M. Bond**
625 Broadway, San Diego 1

GENERAL PRACTICE . . . . **A. J. Franzi**
3620 Army Street, San Francisco 10

GENERAL SURGERY . . . . . . **William P. Mikkelsen**
1930 Wilshire Boulevard, Los Angeles 57

INDUSTRIAL MEDICINE AND SURGERY . . . . **John H. Leimbach, Jr.**
525 Golden Gate Avenue, San Francisco 1

INTERNAL MEDICINE . . . . . . **Clifford B. Cherry**
2400 Beverly Boulevard, Los Angeles 57

OBSTETRICS AND GYNECOLOGY . . **Edward F. Healey**
711 D Street, San Rafael

ORTHOPEDICS . . . . **Bret W. Smart**
2929 Summit Street, Oakland 9

PATHOLOGY AND BACTERIOLOGY . **George J. Hummer**
1328 22nd Street, Santa Monica

PEDIATRICS . . . . **Harry O. Ryan**
194 North El Molino, Pasadena 4

PHYSICAL MEDICINE . . . . . **S. Malvern Dorinson**
450 Sutter Street, San Francisco 8

PSYCHIATRY AND NEUROLOGY . . . **Robert E. Wyers**, **Mark Zeifert**
Psychiatry: Robert E. Wyers, Metropolitan Hospital, Norwalk
Neurology: Mark Zeifert, 1065 S Street, Fresno 21

PUBLIC HEALTH . . . . **Ellis D. Sox**
101 Grove Street, San Francisco 2

RADIOLOGY . . . . **John R. Bryan**
450 Sutter Street, San Francisco 8

UROLOGY . . . . **Sam Peck**
233 A Street, San Diego 1

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

BY MID-JULY, reported cases of paralytic poliomyelitis in California totalled 134, as compared with 100 cases and 60 cases, respectively, in the corresponding periods of 1959 and 1958.

The cases have been distributed throughout the state, with the greatest number reported from Los Angeles and San Diego counties. More than 50 per cent of paralytic poliomyelitis is reported in the under-five age group, in which about 750,000 children have had fewer than the required number of injections, some 335,000 having had no protection whatsoever.

It is estimated that only 40 per cent of California's total population has been protected against paralytic poliomyelitis.

* * *

Eight special projects in maternal and child health and crippled children services, with a budget totaling $426,604, have been approved by the State Department of Public Health for financing from special funds provided by the U. S. Children's Bureau during 1960-61.

The projects include a mental retardation study at Children's Hospital of Los Angeles, a nutrition project by the Berkeley City Health Department, a child amputee prosthetics project by the University of California School of Medicine, Los Angeles, and a hearing project at John Tracy Clinic, Los Angeles.

Pending availability of funds, two other projects were approved for Stanford University School of Medicine in family medicine and in audiology training.

* * *

The three-year California-Cornell Automotive Crash Injury Research Project was completed in June. The project was part of a 17-state study, now in its sixth year, conducted by Cornell University.

The purpose of these studies is to show the relation of the structural design of cars to personal injury. Some safety designing has appeared in recent automobile models as the result of the research, such as dashboard padding, the recessed steering wheel, improved door locks, and the use of safety belts.

As its part in the project the State Health Department obtained and processed accident reports, and coordinated the medical procedures among the state and local agencies that provided injury data on accident victims.

Participating organizations included the California Medical Association, physicians and hospitals in local communities, the California Highway Patrol, and the California Hospital Association.

* * *

The San Bernardino County Health Department has received one of the annual Samuel J. Crumbine awards for the development of an outstanding program of environmental sanitation. The Crumbine awards are the highest given in the nation for achievement in this field. The contest was open to over 1,200 local health departments from coast to coast.

As president of the American Public Health Association it was my pleasure to present the plaque symbolizing the award to Dr. Merle E. Cosand, health officer of San Bernardino County, at the annual meeting in Denver of the Western Branch of the APHA.

* * *

The State Board of Public Health's unanimous decision not to institute action against Stanford University and the College of Medical Evangelists on complaints by the Humane Society of the United States charging illegal use of laboratory animals was recently upheld by the Alameda County Superior Court.

In its investigation of the charges, the department found no significant violations relating to the use and care of laboratory animals. In both cases the Board of Health unanimously resolved to order no further proceedings, since the facts disclosed did not warrant further action.

Humane Society attorneys then prepared a writ of mandamus against the director of the department for the purpose of forcing the department to conduct a formal hearing on the issues relating to the College of Medical Evangelists. A second such writ was contemplated for the Stanford situation.

Ensuing arguments before Superior Court Judge Cecil Mosbacher resulted in a decision in favor of the department and the board. The Humane Society has stated intention to appeal this decision, and to fulfill its proposed action against the department and the board for the resolution relating to Stanford.

INFORMATION

Old Age Medical Care Needs

A Comprehensive Medical Health Evaluation Program Proposed for Old Age Security Recipients

A VOLUNTARY PROGRAM of health evaluation examinations for Old Age Security (OAS) recipients 65 to 70 years of age that will serve a dual purpose, has been proposed by the State Department of Social Welfare on a one-year pilot basis.

Improved preventive medicine for California's aged and data for analysis of the extent and nature of the health problems in that group are the objectives. The program has not yet been worked out in the detail that would be necessary for its adoption, but it is being studied at state level by representatives of C.M.A., Social Welfare, and others. Achievement of the objectives would depend on the degree to which California physicians and medical societies participated. The 65 to 70 age group was suggested for the study because it was considered adequately representative for statistical purposes, yet within the limited budget. Also, it was felt that rehabilitation possibilities would be higher in this bracket.

Present estimates indicate that approximately 4,000 OAS beneficiaries a month will be eligible for a voluntary health evaluation examination. These examinations would be performed by the individual's personal physician at a fee yet to be determined. If the eligible person had no personal physician, he would be referred to physicians who have agreed through their county societies to do this sort of examination for the fee that the OAS is able to pay for the service.

The principle of the proposed program has received the endorsement of the C.M.A. Council. The structure of the program on a pilot basis has been developed by the State Department of Social Welfare and its Medical Care Advisory Committee, on which the C.M.A. is represented. The move is an example of positive application of A.M.A. president Doctor Louis M. Orr's recent pronouncement urging better organization of medical care programs for the needy aged and *improved preventive measures.*

It is anticipated that the physicians in some counties will prefer to have laboratory and radiology tests secured on a group basis, while in other counties the physician will prefer that they be obtained in another manner. Provision has been made for local county option to select the method for obtaining these services best adapted to the physicians in the area.

An advisory committee composed of experienced internists and general physicians would recommend the nature and extent of examinations, the routine laboratory and radiologic work to be obtained, and the type of check-off history and medical report form to be used. Their primary purpose would be to provide medical orientation to the entire program. Recommendations would be minimal and would not limit the examining physician's judgment. Responsibility for indicated follow-up treatment would, of course, remain with the examining physician.

By use of a physician's capacity for early diagnosis, the elderly patients of the state would be able in a dignified way to improve their health habits and, through training and education at the hands of a physician, could better learn to do something constructive about their health problems. A principle of the study is that the early detection, alleviation or reduction of the severity of disability and illness can result in a great saving to the individual and the community, and perhaps permit the patient to make a greater constructive contribution to himself and to the community.

Of significant value also is the wealth of information on this so-far little documented area of health needs that such a program would provide. Already it has been found out, in attempts to come to grips with problems of health care for the aging population, that until such information is available, it is virtually impossible to make broad scale plans.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Thirty-Seventh Annual Meeting, National Auxiliary

THE thirty-seventh annual convention of the Woman's Auxiliary to the American Medical Association was held at the Deauville Hotel, Miami Beach, Florida, June 13 to 16, concurrently with the A.M.A. convention. It was a most stimulating, enlightening and inspiring experience. I was impressed with the wonderful contributions the Woman's Auxiliaries in our 50 states are making. It is recognized that the C.M.A. Auxiliary plays an important role in determining how the great resources of the national auxiliary, with its thousands of members, may be directed to make the national organization a more effective and meaningful one.

The Woman's Auxiliary to the California Medical Association remains in first place in membership with 7,068. This membership entitled us to 24 delegates (one for every 300 members). Of the possible 24 delegates, there were 18 active, interested, loyal women in attendance. As chairman of the delegation, I was most pleased and proud of this excellent representation.

Los Angeles County Auxiliary was commended for its contribution of over $4,000 to A.M.E.F. This was the largest sum ever given by any county medical society in the country. An additional thrill was the honor bestowed on Mrs. E. Vincent Askey who received the award in behalf of Los Angeles County. The total contribution by the Woman's Auxiliary to the C.M.A. was $13,688, placing it fourth amongst the states.

The Woman's Auxiliary to the A.M.A. presented the A.M.E.F. with a check for $170,230, the largest to date, and an increase of more than $30,000 over last year. Five thousand dollars of the total was given in memory of auxiliary members who died during the past year.

The C.M.A. Auxiliary is proud to have two of its former presidents serving in offices on the national level. Mrs. Theodore Poska, our immediate past president, was installed as constitutional secretary, and Mrs. Stanley Truman is serving her second year as a member of the board of directors.

Dr. Glen R. Shepherd, assistant secretary, A.M.A. Council on Medical Education and Hospitals, spoke on "Medicine as a Career." This talk was arranged by the Para-Medical Careers Committee, which is now termed Health Careers. This extremely important committee has opened up many new vistas to our youth and has made them aware of the many fields pertaining to medicine.

Dr. Edward L. Bortz, an A.M.A. past president and consultant to the Committee on Aging, presented a most timely and informative message entitled "The Evergreen Years." His excellent advice and suggestions left us, to use his own phrases, "feeling in a hurry to get older" and welcoming the "grandeur of maturity." His compliment, "One woman on her feet is worth three on her seat," literally made us all stand up.

Dr. McKinnie L. Phelps, vice-chairman of the A.M.A. Council on Legislative Activities, brought us up to date with his talk on "A.M.A. Platform for Political Action." This message urged us to keep abreast of legislation at this very important time, and to work closely with our medical societies, the A.M.A. and legislative council members. He also encouraged us to work actively in the field of federal legislation through other organizations with which we are affiliated.

A most worthwhile talk and a subject that interested all of us was presented by John Bach of the A.M.A. Division of Communication. He recommended that we think carefully of "what we say and how we say it" and to recognize the significance of the words. He suggested that each auxiliary appoint critics to read medical articles and evaluate them.

* * *

In 1931 the A.M.A. requested aid of the Woman's Auxiliary to further the sales of *Hygeia*, which since has become *Today's Health*. Circulation then was 160,000. Auxiliaries throughout the country worked diligently, increasing the circulation to more than 830,000. At our Miami Beach meeting Mr. Robert Enloe, director of circulation and records, A.M.A., gave the Auxiliary a new "Project 60"— to aid in increasing the circulation of *Today's Health* in schools, as well as to members of the faculty. Some 28,000 schools and colleges are now receiving *Today's Health* monthly.

* * *

The acquisition of members, both new and former ones, was strongly emphasized and urged. This project has been of particular interest to me. I do think that with your assistance, progress can be made. Although the Auxiliary has the largest membership in the United States, it is far below its potential. Auxiliary membership in California is 7,068, which is less than 40 per cent of the C.M.A. total. Our goal is to match the C.M.A. total of over 17,000. Our aim this year is "Every Doctor's Wife an Auxiliary Member." I am sure that if every physician showed enthusiasm for the Auxiliary, his wife would be a member. It is important that each doctor encourage his wife to inquire about the many endeavors of the Auxiliary and its many accomplishments.

As chairman of the delegation, I wish to express my sincere thanks to the loyal and hard-working delegates—especially to Mrs. Robert Gobar, who acted as reporter.

I am personally indebted to the C.M.A. delegation for many kindnesses to me.

MRS. SAMUEL GENDEL
President, Woman's Auxiliary to the
California Medical Association

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Laurance W. Kinsell, director of the Institute for Metabolic Research at Highland-Alameda Hospital in Oakland, has received a grant of $10,000 from the Wesson Fund for Medical Research and Education. The grant is in support of studies by Dr. Kinsell on the disposition of edible fats in the human organism.

IMPERIAL

Dr. Paul O'Rourke, until recently in private practice in Marin County, last month took the newly created position of director of public health for Imperial County. He replaced **Dr. Hyland J. Hebert** as county health officer, Dr. Hebert remaining with the department as assistant health officer in charge of maternity and pediatrics.

As director, Dr. O'Rourke will coordinate the county's three public health facilities, the county hospital, the tuberculosis sanitarium and the Department of Health.

LOS ANGELES

The newly elected officers of the **Southwestern Pediatric Society** are: president, Dr. John Wilcox, Pomona; vice-president, Dr. Deron Hovsepian, Pasadena; and secretary-treasurer, Dr. Harry O. Ryan, Pasadena.

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Dr. John H. Aldes, director of the Department of Rehabilitation, Cedars of Lebanon Hospital, has been named by the President's Committee on Employment of the Physically Handicapped to receive the 1959 Physician's Award.

The award, an illuminated scroll signed by the President of the United States, will be presented to Dr. Aldes at the annual banquet of the Congress of Industrial Health of the American Medical Association in Charlotte, North Carolina, on Tuesday, October 11.

* * *

Dr. Charles M. Stewart, Los Angeles, was elected president of the Western Section of the American Urological Association at the annual meeting of the organization, held in Vancouver, B. C., June 20 to 23. **Dr. James Ownby, Jr.,** San Francisco, was named president-elect, and **Dr. John W. Dorsey,** Long Beach, was elected secretary-treasurer.

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A booklet containing **dietary instructions** that can be given by physicians to patients for whom they have prescribed a **low fat diet** has been prepared by the Los Angeles County Heart Association's Special Diets Committee.

Titled "Controlled Fat Menu Plan," the 28-page booklet covers a number of medically-approved general "do's and don't's" of diet and 14 pages of recipes for many types of appropriate meals. Priced at 15 cents a copy, it may be ordered from Los Angeles County Heart Association, 2405 West Eighth Street, Los Angeles 57

SAN FRANCISCO

Dr. Frederick C. Cordes, professor-emeritus of ophthalmology, University of California School of Medicine, San Francisco, was awarded the Howe Prize Medal of the Section on Ophthalmology of the American Medical Association at its annual meeting in June.

The medal, awarded for outstanding service in the field of ophthalmology, was presented by Sir Stewart Duke-Elder, ophthalmologist to Britain's royal family, and a past recipient of the medal.

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The 62nd annual meeting of the **American Hospital Association** will be held in San Francisco August 29 to September 1. An attendance of 12,000 is forecast by the association.

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John R. Little early last month was elected president of the board of trustees of the Presbyterian Medical Center of San Francisco, which on May 1 of this year took over all the San Francisco buildings and facilities of the Stanford University School of Medicine and Stanford Hospitals. Many of the physicians who did not remain on the Stanford teaching staff when the School of Medicine was moved to Palo Alto and the Stanford campus have joined the staff of the new Presbyterian Center.

Chief of staff is Dr. Forrest M. Willett, and the chiefs of services are: Anesthesiology, Philip J. Bailey, M.D.; cardiopulmonary service, Arthur Selzer, M.D.; cardiovascular surgery, Frank Gerbode, M.D.; dentistry, Edward J. Lattig, D.D.S.; dermatology, Harold M. Schneidman, M.D.; E.N.T., Robert C. McNaught, M.D.; medicine, George B. Robson, M.D.; neurology, Knox H. Finley, M.D.; obstetrics, gynecology, C. Frederic Fluhmann, M.D.; ophthalmology, Jerome W. Bettman, M.D.; orthopedics, Donald E. King, M.D.; outpatient clinics, Ralph W. Schaffarzick, M.D.; pathology, Robert J. Kleinhenz, M.D.; pediatrics, Charles W. Leach, M.D.; physical medicine, Robert P. Watkins, M.D.; psychiatry, J. P. Kahn, M.D.; radio-isotope laboratory, Jerold M. Lowenstein, M.D.; radiology, William L. Anderson, M.D.; surgery, Victor Richards, M.D.; urology, Henry M. Weyrauch, M.D.

SAN LUIS OBISPO

Dr. H. O. Swartout retired on June 30, this year, from the position of Health Officer of the County of San Luis Obispo. Dr. Swartout had served in that capacity for 12 years, having joined the department in 1946 after a number of years with the Los Angeles County Health Department.

SAN BERNARDINO

The San Bernardino County Health Department has received a **Samuel J. Crumbine Award** for the development of an outstanding program of environmental sanitation. The Crumbine awards are the highest given in the nation for achievement in the field of environmental sanitation. The contest was open to over 1,200 local health departments from coast to coast.

In recognition of a well-balanced, strong program of sanitation services, Dr. Malcolm H. Merrill, president of the American Public Health Association and director of the California State Department of Public Health, presented the plaque symbolizing the award to **Dr. Merle E. Cosand,** health officer of San Bernardino County, at the annual meeting of the Western Branch of the American Public Health Association in Denver in May. Dr. Cosand and Richard E. Elliott, director of sanitation service for San Bernardino County, were each given personal recognition in the form of a bronze medal for their leadership in the program.

SANTA CLARA

Friends, colleagues and patients of the late **Dr. Albert M. Snell** have begun subscriptions to a **memorial fund** which will endow a continuing series of lectures on gastroenterology to honor his memory. Dr. Snell, an outstanding teacher, student and practitioner of medicine, died last February. He was a member of the faculty of Stanford University School of Medicine, Palo Alto.

Persons wishing to make contributions to the memorial lecture endowment may do so by mailing a check to the Albert M. Snell Fund, Palo Alto Medical Research Foundation, Palo Alto, California.

SONOMA

The Sonoma County Medical Society has prepared, with the help of C.M.A.'s Public Relations Department, a **pamphlet for distribution to new residents of the county** through Welcome Wagon, Hospitality Hostess and similar services. In a warm, friendly, informal way, the pamphlet welcomes new residents, tells them of the services offered by the county medical society, recommends that they choose a family physician against possible need later, offers help in the selection of health insurance, and lists the telephone numbers of the society's emergency medical service.

Although in use for only a short time, the pamphlet already has drawn so much favorable response that society officials consider it a good instrument in public relations. Other societies wishing to use something of the same kind may obtain copies for examination by writing to Sonoma County Medical Society, 300 American Trust Building, Santa Rosa.

GENERAL

Patients on **sodium-restricted diets** can now "read the label" for the sodium content of their drinking and cooking water.

The California Heart Association and the State Department of Public Health have just completed a survey of **the sodium in public water systems** supplying approximately 80 per cent of California's population.

The report, titled "Sodium Content of Drinking Water," is intended as a reference source of physicians, dietitians, health departments, medical teaching institutions and chapters of the California Heart Association. It was compiled through the joint efforts of the California State Department of Public Health and the California Heart Association's nutrition committee. Distribution was made July 1 to all county and city health departments and medical teaching institution libraries. Copies may be obtained from county Heart Associations, the California Heart Association, or the California State Department of Public Health offices.

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The American Urological Association has announced the opening of the contest for its annual award of $1,000 (first prize of $500, second prize $300, and third prize $200) for essays on the result of some clinical or laboratory research in Urology. Competition is limited to urologists who have been graduated not more than ten years, and to hospital interns and residents doing research work in urology.

The first prize essay will appear on the program of the forthcoming meeting of the American Urological Association, to be held at the Hotel Biltmore, Los Angeles, May 22 to 25, 1961.

Full particulars may be obtained from the executive secretary of the Association, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before December 1, 1960.

C.M.A. Liaison with County Societies

To improve communications between the headquarters offices of the California Medical Association and component county societies as well as individual physicians, seven members of the staff have been assigned to maintain liaison with various areas of the state.

It is planned that the staff members will periodically visit the county society offices in the areas to which they are assigned in order to learn of any problems, or of new methods of dealing with problems that a county organization may have developed, and then will transmit their information to the appropriate department in the state association for action. Names of the staff members and the county societies to which they are assigned:

Walter E. Batchelder, M.D.—Santa Cruz, San Benito, Monterey, San Luis Obispo, Santa Barbara and Ventura.

Ed Clancy—Los Angeles, San Diego, Imperial, Orange, Riverside, San Bernardino and Inyo-Mono.

Jack Collins—Fresno, Kings, Tulare and Kern.

John Hunton—Six societies in District Nine (Marin and north).

Robert Marvin—Nine societies in District Ten (Sacramento and north).

Robert Thomas—Alameda-Contra Costa, San Francisco, San Mateo and Santa Clara.

William Whelan—San Joaquin, Merced, Stanislaus and Madera.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Arthritis and Rheumatism. Wednesday and Thursday, August 17 and 18. Twelve hours. Fee: $15.00 (includes lunch).

Obstetrical Procedures and Complications. Friday and Saturday, August 26 and 27. Fourteen hours. Fee: $50.00 (includes two luncheons).

Fetal Electrocardiography. Sunday, August 28. Seven hours. Fee: $20.00.

Elements of Psychiatry in Clinical Practice. Thursdays, September 17 through June 11. (2 Conferences at Lake Arrowhead, plus weekly evening sessions.) Ninety-two hours. Fee: $150.00.

Below-Knee Prosthetics. Monday through Friday, September 19 through 23. Enrollment limited to 20. Fee: $125.00.

Psychotherapeutic Methods for General Practitioners. Mondays, October 3 through March 27. Seventy-two hours. Fee: $75.00.

Neuropathology. Tuesdays and Thursdays, October 18 through December 6. Twenty-eight hours. Fee: $105.00.

Below-Knee Prosthetics. Monday through Friday, October 31 through November 4. Enrollment limited to 20. Fee: $125.00.

Diagnosis and Treatment of Anemia. Friday and Saturday, December 9 and 10. Twelve hours. Fee: $40.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 9 through 22. Twenty-four hours. Fee: $125.00.

Bedside Clinics (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: $50.00.

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $15.00 (includes one lunch and one dinner).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 13 through May 4. Thirty-two hours. Fee: $150.00.

Low Back Pain. Friday and Saturday, May 12 and 13. Twelve hours.*

For Nurses and Ancillary Personnel

Thirteen courses will be offered during the summer and fall for nurses and other ancillary personnel.

Contact: Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Obstetrics and Gynecology. Thursday to Saturday, September 15 to 17. Twenty-one hours. Fee: $50.00.

Radiological Physics (32 Tuesday evenings). September 20 through April 24. For residents. Fee: $100.00.

Psychotherapy in General Practice. Wednesday evenings, September 21 through December 7. Fee: $25.00.

Neuropsychiatry in General Practice (Napa State Hospital). Thursday evenings, September 22 through November 27. Fee: $25.00.

Advances in Surgical Anatomy, Normal Anatomy and Histology of the Eye. Thursday and Friday, September 22 and 23. Fourteen hours. Fee: $50.00.

Tonography. Saturday, September 24. Seven hours. Fee: $25.00.

Internal Medicine. Tuesday through Saturday, September 27 through October 1. Thirty-five hours.*

Surgery, Franklin Hospital. Saturday and Sunday, October 8 and 9. Fourteen hours. Fee: $25.00.

Environmental Dermatosis Due to Contact and Physical Agents. Friday and Saturday. October 14 and 15. Fourteen hours.*

Advances in Ophthalmic and General Pathology. Thursday through Saturday, November 3 through 5. Twenty-one hours.*

Symposium on Ear-Nose-Throat Problems in Children, Children's Hospital. Saturday, November 5. Seven hours. Fee: $12.50.

A Course in Ophthalmology. Thursday through Saturday, December 1 through 3. Twenty-one hours.*

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Symposium on Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Man and Civilization: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours.*

Psychotherapy in General Practice. Wednesday evenings, February 8 through April 26. Fee: $25.00.

Diagnostic Radiology. Wednesday through Monday, March 15 through 20. Forty-eight hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For Nurses and Ancillary Personnel

Twelve courses will be offered during the summer and fall for nurses and other ancillary personnel.

Contact: Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Monday and Wednesday, 7 to 8:30 p.m.

Postgraduate Conference, Retinal Detachment. Wednesday, Thursday and Friday, September 14, 15, 16.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Cardiac Resuscitation. Each Wednesday throughout the year, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition for all other physicians: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

CLINICAL TRAINEESHIPS available in all clinical departments by arrangement with the Postgraduate Division and the chairman of the department or departments involved. Eighty hours minimum. Fee: As arranged.

Diseases of the Chest: Two and four-week Traineeships in cooperation with the Los Angeles County Hospital. Dates as arranged.

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*Fee to be announced.

Anesthesia. Monday through Friday. Dates as arranged. Six months. Fee: $350.

JOINT MANIPULATION. Monday through Friday, 8:00 to 12:00, dates to be arranged. Twenty hours. Fee: $75.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

For **Dunsmuir, Redding, Chico,** and **Marysville** in cooperation with Stanford University School of Medicine. Begins week of September 19, 1960.

For **Eureka, Ukiah, Napa** and **Auburn** in cooperation with University of California, San Francisco School of Medicine. Begins week of September 19, 1960.

POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, location to be announced, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 13 and 14, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* Malcolm J. Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine. Lake Tahoe. Location and regional chairman to be announced.

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Audio-Digest Foundation, a nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

AUGUST MEETINGS

Reno Surgical Society 10th Annual Conference. August 18, 19 and 20. The Mapes Hotel, Reno. *Contact:* Harry B. Gilbert, M.D., 275 Hill Street, Reno, Nevada.

American Association of Blood Banks, Jack Tar Hotel, San Francisco. August 21 through 26. *Contact:* John B. Alsever, M.D., secretary, 1211 W. Washington St., Phoenix, Arizona.

American Physiological Society. August 22 through 26. Stanford University, 300 Pasteur Drive, Palo Alto. *Contact:* Mr. Ray G. Daggs, executive secretary, 9650 Wisconsin Ave., Washington 14, D. C.

American Hospital Association, Civic Auditorium, San Francisco. August 27 through September 1. *Contact:* Mr. Maurice J. Norby, assistant director, 18 E. Division St., Chicago.

SEPTEMBER MEETINGS

Pacific Dermatologic Association Inc. 12th Annual Meeting. Empress Hotel, Victoria, British Columbia. September 2 through 4. *Contact:* Edward Ringrose, M.D., secretary, 2636 Telegraph Ave., Berkeley.

Oregon State Medical Society, Portland. September 7 through 9. *Contact:* Mr. Roscoe K. Miller, executive secretary, 1115 S. W. Taylor St., Portland 5, Oregon.

Nevada State Medical Association Annual Meeting. September 7 through 10. Stardust Hotel, Las Vegas. *Contact:* Nelson B. Neff, executive secretary, P. O. Box 2790, Reno, Nevada.

Postgraduate Assembly of Saint John's Hospital. September 8 through 10. 9 a.m. to 4 p.m., St. John's Hospital, Santa Monica. *Contact:* John C. Eagan, M.D., director, 1328 22nd St., Santa Monica.

Santa Barbara County Heart Association Physicians Symposium. September 17, 9:00 a.m. to 5:00 p.m., Biltmore Hotel, Santa Barbara. *Contact:* E. J. Hannon, executive director, 18 La Arcada Court, Santa Barbara.

California Society of Internal Medicine Annual Meeting, Yosemite. September 23, 24 and 25. *Contact:* Barbara E. Oulton, executive secretary, 350 Post St., San Francisco 8.

Washington State Medical Association Annual Convention. September 25 through 28. Olympic Hotel, Seattle, Washington. *Contact:* R. W. Neill, executive secretary, 1309 7th Avenue, Seattle, Washington.

Southern California Society of Gastroenterology Panel Discussion "Ulcerative Colitis." September 27. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

Pan-Pacific Surgical Association 8th Intensive Surgical Congress, embracing all Surgical Specialties. September 27 through October 5. Honolulu, Hawaii. *Contact:* F. J. Pinkerton, M.D., director general, Suite 230, Alexander Young Building, Honolulu 13.

OCTOBER MEETINGS

American Society of Plastic and Reconstructive Surgery. Statler Hotel, Los Angeles, October 2 through 7. *Contact:* Thomas R. Broadbent, M.D., secretary, 508 E. S. Temple, Salt Lake City.

San Diego County Heart Association 10th Annual Symposium on Heart Disease. October 3 and 4. El Cortez Hotel. *Contact:* O. Martin Avison, 3545 Fourth Avenue, San Diego 3.

American Association for the Surgery of Trauma. Coronado Hotel, San Diego. October 5 through 7. *Contact:* William T. Fitts, Jr., M.D., secretary, 3400 Spruce St., Philadelphia 4.

Los Angeles County Heart Association 30th Annual Professional Symposium on Cardiovascular Diseases.

October 5 and 6. Beverly Hilton Hotel, Beverly Hills. *Contact:* Los Angeles County Heart Association, 2405 W. 8th St., Los Angeles 57.

San Francisco Heart Association 30th Annual Postgraduate Symposium on Heart Disease. October 5 through 7. St. Francis Hotel, San Francisco. *Contact:* Mr. Lawrence I. Kramer, Jr., executive director, 259 Geary St., San Francisco 2.

Western Industrial Medical Association combined Meeting with 4th Western Industrial Health Conference. October 7 through 9. Jack Tar Hotel, San Francisco. *Contact:* Verne G. Ghormley, M.D., president, 3032 Tulare Street, Fresno 21.

Metabolic Errors, Genetics and Mental Disease, Second Invitational Conference. October 8, Napa State Hospital, Napa. *Contact:* David Wardell, M.D., chief of professional education, Sonoma State Hospital, Eldridge, Calif.

American College of Surgeons, 46th Annual Clinical Congress, San Francisco. October 10 to 14. *Contact:* William E. Adams, M.D., secretary, 40 E. Erie St., Chicago 11, or Leon Goldman, M.D., arrangements chairman, professor and chairman, Department of Surgery, University of California Medical Center, San Francisco 22.

American Cancer Society California Division Annual Meeting. October 13 through 15. Villa Hotel, San Mateo. *Contact:* Jane N. Lounsbury, assistant director, Field Services, 467 O'Farrell, San Francisco.

Kaiser Foundation Hospitals in Northern California Fourth Annual Symposium on Human Genetics. October 14 and 15. Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., Director of Medical Education, 280 West MacArthur Blvd., Oakland.

California Academy of General Practice 12th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

Western Orthopedic Association Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. *Contact:* Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

Association of State and Territorial Health Officers. Jack Tar Hotel, San Francisco. October 26 through 28. *Contact:* A. C. Offutt, M.D., secretary-treasurer, 1330 W. Michigan Street, Indianapolis 7.

St. Jude Hospital—Fullerton 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. *Contact:* B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

American School Health Association, San Francisco. October 30 through November 4. *Contact:* A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

American Public Health Association, San Francisco. October 31 through November 4. *Contact:* Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

NOVEMBER MEETINGS

San Diego County General Hospital 14th Annual Postgraduate Assembly. Wednesday and Thursday, November 2 and 3. San Diego County General Hospital, North End of Front Street, San Diego. *Contact:* Frank H. Carter, M.D., chairman, 2001 Fourth Avenue, San Diego 1.

American Society of Tropical Medicine and Hygiene. Biltmore Hotel, Los Angeles. November 2 through 5. *Contact:* Rolla B. Hill, M.D., executive secretary, 3575 St. Gaudens Rd., Miami 33, Florida.

Pacific Coast Fertility Society. November 10 through 13, Hotel Tropicana, Las Vegas, Nev. *Contact:* Anah C. Wineberg, M.D., secretary-treasurer, 3120 Webster Street, Oakland.

California Sanatorium Association Annual Business, Clinical and Administrative Session. November 12. Olive View Hospital, Olive View, Calif. *Contact:* J. P. Myles Black, M.D., Olive View Hospital, Olive View, Calif.

California Conference of Local Health Officers Fall Meeting, November 15 and 16. State Department of Public Health, 2151 Berkeley Way, Berkeley 4. *Contact:* State Department of Public Health, Berkeley.

American College of Physicians Southern California Regional Annual Basic Science Lectureship. November 18, California Club, Los Angeles. Dinner and cocktails, 6:30 p.m. Speaker: Melvin Calvin, Ph.D., professor of chemistry, University of California, Berkeley. Subject: "Origins of Life." Members and invited guests. *Contact:* George C. Griffith, M.D., governor ACP, P.O. Box 25, 1200 N. State Street, Los Angeles 33. CApitol 5-3131, Ext. 7-1543.

Southern California Society of Gastroenterology Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

DECEMBER MEETINGS

American College of Chest Physicians Sixth Annual Postgraduate Course on Diseases of the Chest. December 5 through 9, 9 to 5 daily, Jack Tar Hotel, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Ill.

1961 MEETINGS

Long Beach Heart, Cancer and TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 1:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

American College of Physicians Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. Abstracts (300 words) of papers for consideration of presentation at the meeting should be sent in triplicate before November 1 to Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

Southern California Society of Gastroenterology. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

Southwestern Pediatric Society Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

College of Medical Evangelists Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

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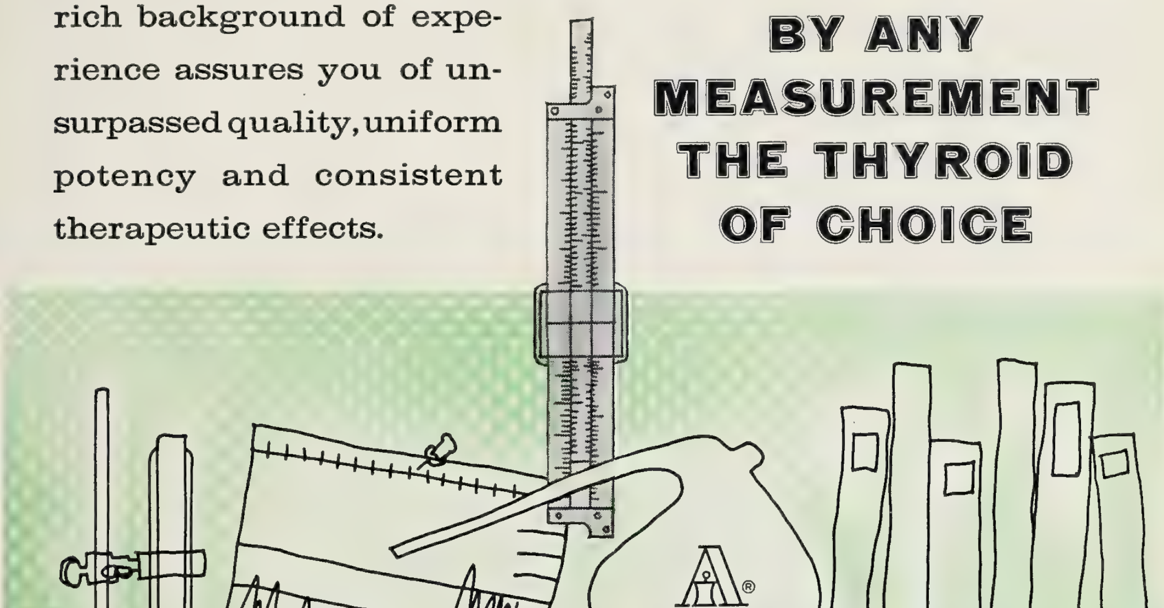

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Griseofulvin Tested in Arthritic Ailment

Griseofulvin, an antibiotic proved effective against certain skin infections, is being used to treat an arthritic ailment.

The new development was reported by Drs. Abraham Cohen, Richard Daniels, and William Kanenson, all of Philadelphia, and Dr. Joel Goldman, Johnstown, Penn., in the June 4 *Journal of the American Medical Association.*

They said they had achieved good results in 12 patients suffering shoulder-hand syndrome, a disease that affects the nerves and circulation, and is characterized by pain, tenderness, and limitation of movement of the shoulder, hand, and fingers.

"We are unable to give a scientific explanation for our findings," the physicians said. "This is a preliminary report in the hope that others might use this method to either confirm or refute our findings."

The four physicians said they experimented with griseofulvin after noting that when it was used to treat fungus infections of the skin any inflammation associated with the infection disappeared along with the infection.

Proceeding on the theory that the antibiotic was an anti-inflammatory agent, they began administering it to patients with rheumatoid arthritis, including those with shoulder-hand syndrome.

Although those with shoulder-hand syndrome benefited, those with rheumatoid arthritis did not.

The physicians said this led them to believe that griseofulvin was not an anti-inflammatory agent.

Dr. Cohen is director of the Arthritis Clinic at Philadelphia General Hospital. The co-authors also are associated with General Hospital.

Cancer of Gallbladder Not a Rarity

(Continued from Page 44)

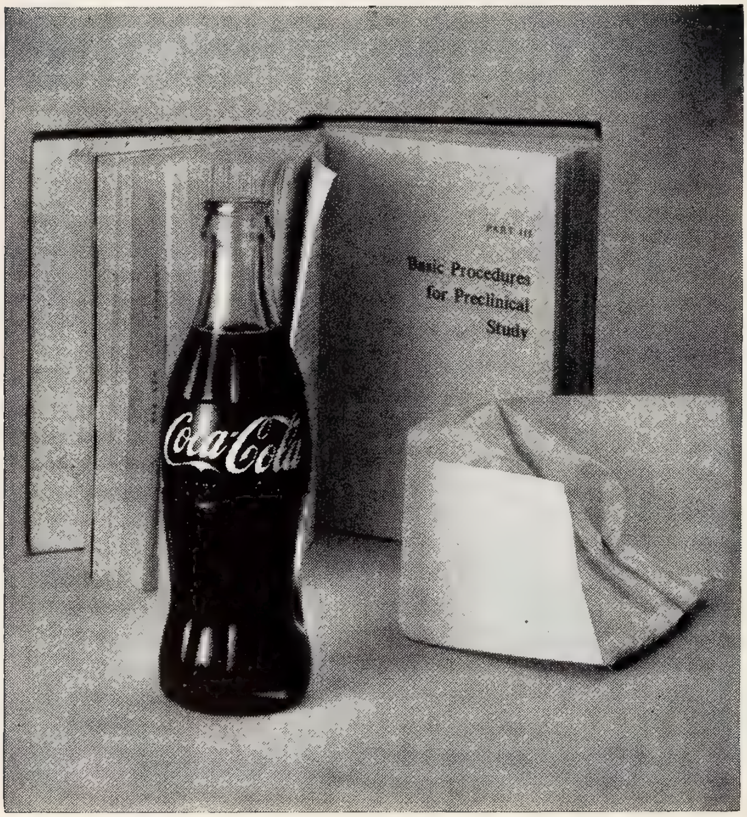
"Hence, since life expectancy, once the diagnosis of carcinoma is made, can be counted in months, we must conclude that it most certainly constitutes a real threat to life," the surgeons said.

". . . gallbladders with gallstones should be removed before they become vocal. For if they begin to shriek with malignant changes, it is often too late.

"We can only conclude that if this gloomy outlook is to be brightened, a more aggressive attitude must be taken toward eradication of gallstone disease."

A century ago cancer of the gallbladder was considered an extreme rarity, they pointed out, but today it ranks sixth among malignant causes of deaths annually in the United States.

Dr. Horwitz is professor of clinical surgery at George Washington University School of Medicine and Dr. Rosensweig is a resident in surgery.



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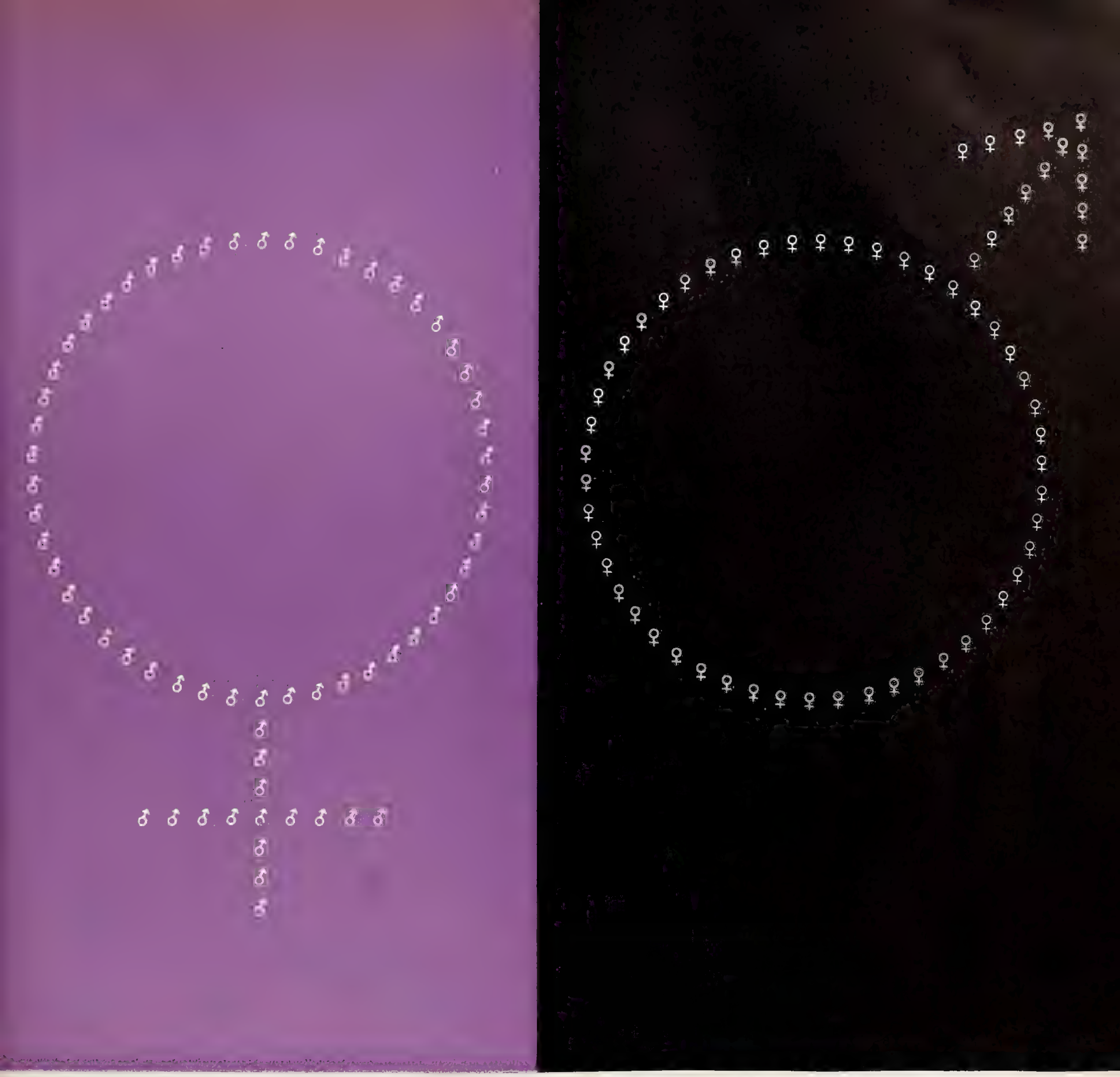

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*Marmell, M., and Prigot, A.: Tetracycline phosphate complex in the treatment of acute gonococcal urethritis in men. Antibiotic Med. & Clin. Ther. 6:108 (Feb.) 1959.

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Physician Population Increases By 4,769 in 1959

The physician population of the United States and its possessions increased by some 4,769 in 1959, the Council on Medical Education and Hospitals of the American Medical Association has reported.

This was an increase of 660 over the gain reported in the previous year, according to the council's report in the May 28 *Journal of the American Medical Association.*

The increase of 4,769 results from the licensing of 8,269 new physicians minus approximately 3,500 physicians who died.

Of the 8,269 new physicians, 1,626 were foreign-trained.

The largest number of first licenses issued was 1,121 by New York. Three other states issued more than 500 first licenses—California 676, Illinois 521, and Pennsylvania 530.

The most notable increases, compared with 1958, were in Alabama, Connecticut, Illinois, New Jersey, Puerto Rico, South Carolina, and Tennessee. There was no marked decrease evident in any state.

The over-all total of licenses to practice medicine and surgery issued in 1959 was 15,954. This figure represented 7,720 granted after a successful written examination and 8,234 granted by reciprocity and endorsement of state licenses or the certificate of the National Board of Medical Examiners. This was an increase of 714 over 1958.

There were 8,996 applicants for licensure by written examination of whom 1,162, or 12.9 per cent, failed. This may be compared with 8,633 applicants of whom 1,365, or 15.8 per cent, failed in 1958.

Nine schools in the United States had no failures among their graduates in medical licensing examinations last year. They are the University of California, Los Angeles; University of California, San Francisco; Louisiana State University; University of Minnesota; University of Mississippi; University of Nebraska; Woman's Medical College of Pennsylvania; Medical College of South Carolina, and Marquette University.

The 8,996 examinees included 5,845 graduates of approved medical schools in the United States; 178 graduates of approved medical schools in Canada; 2,766 graduates of 244 faculties of medicine located in countries other than the United States and Canada; 22 graduates of the unapproved medical schools in the United States which are no longer in existence, and 185 graduates of schools of osteopathy.

The number of physicians registered in 1959 was 16,068, the greatest number in 56 years.

The report also included results of four examinations given in 1958 and 1959 by the Education Council for Foreign Medical Graduates to foreign

(Continued on Page 66)

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.: J.M.A. Georgia 48:167, 1959.

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New Lung Disease Described By Mayo Physicians

A case of an apparently new lung disease is described by three Mayo Clinic physicians in the May 28 *Journal of the American Medical Association.*

The disease, termed pulmonary alveolar proteinosis, causes pathological changes in the lungs and a variety of symptoms.

The authors of the article are Drs. Edgar G. Harrison Jr., Mathew B. Divertie, and Arthur M. Olsen, Rochester, Minn.

"The disease is one of unknown cause, variable course, and uncertain outcome," they said.

The first report of the disease was made in 1958. The three physicians said the disease could have gone unnoticed among the multitude of other lung diseases, perhaps as a variant of one of them, or it could be a disease process being encountered for the first time.

The disease is characterized by a dense material, containing a high content of fat, that fills the air sacs (alveoli) of the lungs, they said.

The disease is predominantly a disease of adult males, according to the *Journal* article. So far, only 35 cases have been reported, it said.

The case described by the Mayo physicians represented the ninth fatality due to the ailment. The victim was a 42-year-old wholesale fruit merchant.

The authors said there had been some speculation as to whether occupation had a role in causing the disease. In six reported cases, they said, the victims worked with lumber, five in lumberyards and one as a carpenter.

Some investigators, they said, had speculated that the disease may be connected with modern living in view of the numerous aerosols, volatile solvents, and plastics to which the patients may have been exposed.

There is no known treatment for the disease, the authors pointed out.

Physician Population Increases By 4,769 in 1959

(Continued from Page 64)

students to certify that their medical knowledge is comparable to that expected of graduates of approved medical schools in the United States.

As of Jan. 1, 1960, the ECFMG had examined 5,982 foreign medical graduates. Of these, 2,709 had been granted a standard certificate and 1,419 had been granted a certificate good for two years.

July 1, 1960, has been set as the date by which all foreign medical graduates serving as interns or residents in U. S. hospitals will have been certified. The ECFMG is sponsored by the American Hospital Association, the A.M.A., the Association of American Medical Colleges, and the Federation of State Medical Boards of the United States.

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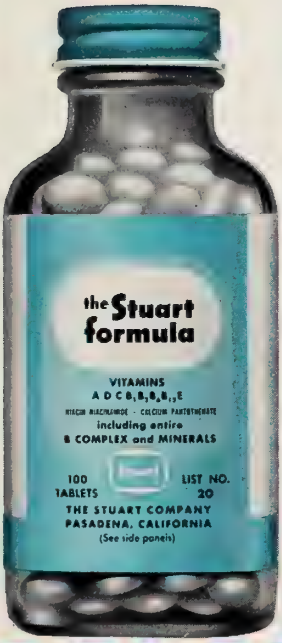
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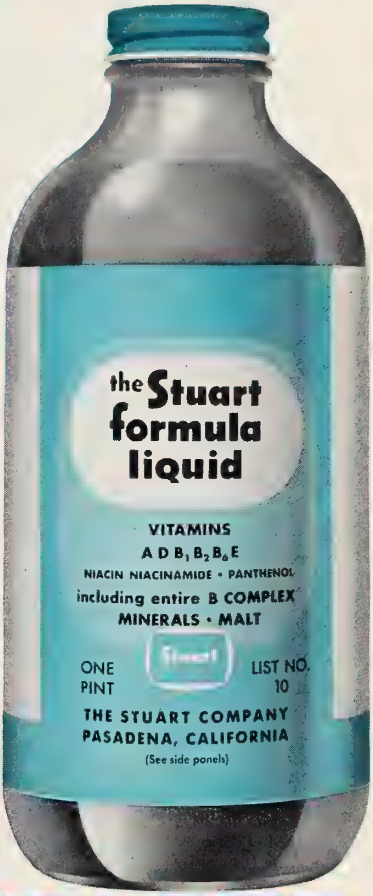
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BOOKS RECEIVED

Books received by CALIFORNIA MEDICINE *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits.*

ANNUAL REVIEW OF MEDICINE—Volume 11, 1960—David A. Rytand, Editor, Stanford University School of Medicine, and William P. Creger, Associate Editor, Stanford University School of Medicine. Annual Reviews, Inc., Palo Alto, 1960. 453 pages, $7.00 per copy, postpaid (U.S.A.); $7.50 per copy (elsewhere), postpaid.

ANOREXIA NERVOSA—Its History, Psychology, and Biology—A Psychosomatic Medicine Monograph—Eugene L. Bliss, M.D., Associate Professor of Psychiatry, University of Utah College of Medicine; and C. H. Hardin Branch, M.D., Professor and Head of the Department of Psychiatry, University of Utah College of Medicine. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 210 pages, $5.50.

ANTIBIOTICS ANNUAL—1959-1960—Proceedings of the Seventh Annual Symposium on Antibiotics—Henry Welch, Ph.D., Chairman of the Symposium; under the Editorial Direction of Felix Marti-Ibanez; and sponsored by Antibiotics & Chemotherapy and Antibiotic Medicine & Clinical Therapy, November 4, 5, and 6, 1959, Washington, D. C. Antibiotica, Inc., 30 East 60th Street, New York 22, N. Y., 1960. 1034 pages, $15.00.

ARTHRITIS AND ALLIED CONDITIONS—A Textbook of Rheumatology. Sixth Edition, Completely Revised and Rewritten with 417 Illustrations—Editor, Joseph Lee Hollander, M.D., Associate Professor of Medicine, School of Medicine, University of Pennsylvania; and Chief of Arthritis Section, University Hospital. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 1306 pages, $20.00.

ATTENUATED INFECTION—The Germ Theory in Contemporary Perspective—Harold J. Simon, M.D., Ph.D., Assistant Professor in Medical Microbiology and Assistant Professor in Medicine, Stanford University School of Medicine. Forewords by Rene J. Dubos, Ph.D., and Walsh McDermott, M.D., J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pennsylvania, 1960. 349 pages, $10.00.

BASIC FACTS OF BODY WATER AND IONS—Stewart M. Brooks, M.S., Science Instructor, Lasell Junior College, Auburndale, Mass., Instructor in Pharmacology at Boston City Hospital School of Nursing, and Children's Hospital School of Nursing, Boston, Mass., Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1960. 159 pages, $2.75.

CARCINOMA OF THE THYROID GLAND—A Clinical and Pathologic Study of 293 Patients at the University of California Hospital—Stuart Lindsay, M.D., Professor of Pathology, University of California School of Medicine; Pathologist, H. C. Moffitt Hospital, San Francisco, California; and Director of Laboratories, Sequoia Hospital, Redwood City, California. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Ill., 1960. 168 pages, $8.50.

CLASSICS OF MEDICINE AND SURGERY—(Formerly titled: Epoch-making Contributions to Medicine, Surgery and the Allied Sciences)—Collected by C. N. B. Camac, Dover Publications, Inc., 180 Varick Street, New York 14, New York, 1960. 435 pages, $2.25.

CLINICAL ENDOCRINOLOGY, I—Edited by Edwin B. Astwood, M.D., Grune & Stratton, New York, 381 Fourth Ave., New York 16, N. Y., 1960. 724 pages, $18.75.

CLINICAL MANAGEMENT OF BEHAVIOR DISORDERS IN CHILDREN—Second Edition, Illustrated—Harry Bakwin, M.D., Professor of Clinical Pediatrics, New York University; Visiting Physician, Bellevue Hospital; and Attending Pediatrician, University Hospital; and Ruth Morris Bakwin, M.D., Associate Professor of Clinical Pediatrics, New York University; Visiting Physician, Bellevue Hospital; and Director Emeritus, Department of Pediatrics, New York Infirmary, W. B. Saunders Company, Philadelphia, 1960. 597 pages, $11.00.

CLINICAL OBSTETRICS AND GYNECOLOGY, Volume 3, No. 1—A Quarterly Book Series—Pediatric Gynecology—Edited by John W. Huffman, M.D., and **Obstetric Emergencies**, edited by Martin L. Stone, M.D. Paul B. Hoeber, Inc., Medical Book Dept. of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 264 pages. $18.00 a year for four consecutive numbers issued quarterly (subscription only).

CLINICAL PHYSIOLOGY — Volume One — Electrolyte Balance, Water Metabolism, Renal Function, Gastro-Intestinal Function, Hepatic Failure—Kathleen E. Roberts, M.D., Director of Research, U. S. Public Health Service Hospital, San Francisco; Assistant Professor of Medicine, Stanford University School of Medicine, Palo Alto. Filmer Publishing Company, 330 Jackson Street, San Francisco, 1960. 226 pages, $6.50.

COMMONSENSE BOOK OF DRINKING, THE—Leon D. Adams; with a Foreword by Morris Fishbein, M.D. David McKay Company, Inc., 119 West 40th Street, New York 18, N. Y., 1960. 210 pages, $3.95.

COMMUNICABLE AND INFECTIOUS DISEASES—Diagnosis, Prevention, Treatment—4th Edition—Franklin H. Top, A.B., M.D., M.P.H., F.A.C.P., F.A.A.P., F.A.P.H.A., Professor and Head, Department of Hygiene and Preventive Medicine, State University of Iowa, Iowa City, Iowa; Director, University Dept. of Health, and Director, Institute of Agricultural Medicine, State University of Iowa; Consulting Director, State (of Iowa) Hygienic Laboratories; and Consultant, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.; and Collaborators. The C. V. Mosby Company, St. Louis, Mo., 1960. 812 pages, with 122 figures and 15 color plates, $20.00.

CONCISE ENCYCLOPEDIA OF MODERN SURGERY, THE—James Hale Rutledge, B.S., M.D., F.A.C.S., Chilton Company—Book Division, 56th and Chestnut Sts., Philadelphia 39, Pa., 1960. 308 pages, $8.00.

DICTIONARY FOR MEDICAL SECRETARIES, A—Isabel Alice Stanton, Secretary, Director of Graduate Training, Baylor University College of Dentistry, Formerly Supervisor, Baylor Hospital Central Dictating Unit; Secretary, Coordinator of Internal Medicine, Division of Graduate Medicine, University of California, Los Angeles. Charles C. Thomas, Publisher, 301-327 East Lawrence Ave., Springfield, Illinois, 1960. 175 pages, $6.50.

DOCTOR IN MANY LANDS, A—The Autobiography of Aldo Castellani—Doubleday & Company, Inc. (575 Madison Ave., N. Y.), Garden City, New York, 1960. 359 pages, $4.95.

EDEMA—Mechanisms and Management—A Hahnemann Symposium on Salt and Water Retention—Edited by John H. Moyer, M.D., Professor and Chairman of the Department of Medicine and Morton Fuchs, M.D., Assistant Professor of Medicine, Hahnemann Medical College and Hospital. W. B. Saunders Company, Philadelphia, 1960. 833 pages, $15.00.

EGO IN LOVE AND SEXUALITY, THE—Edrita Fried, Ph.D., Senior Supervisor, Postgraduate Center for Psychotherapy; Assistant Professor of Psychiatry (Group Psychotherapy), Albert Einstein College of Medicine. Grune & Stratton, 381 Fourth Avenue, New York 16, N. Y., 1960. 296 pages, $5.50.

ELECTROCARDIOGRAPHIC TECHNIQUES—A Manual for Physicians, Nurses and Technicians. Second Revised and Enlarged Edition—Kurt Schnitzer, M.D. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 109 pages, $4.75.

EMPLOYMENT AND CONDITIONS OF WORK OF NURSES—International Labour Office. Distributed in the United States by International Labor Office (Washington Branch), 917 15th Street, N.W., Washington 5, D. C., 1960. 176 pages, $2.00.

EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION—William Beaumont, M.D., Surgeon in the United States Army. (Facsimile of the Original Edition of 1833, together with a Biographical Essay, A PIONEER AMERICAN PHYSIOLOGIST, by Sir William Osler.) Dover Publications, Inc., 180 Varick Street, New York 14, New York, 1960. 279 pages, $1.50.

(More on Page 78)

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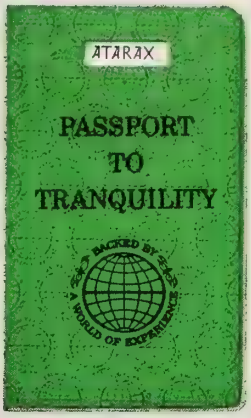

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IN ELDERLY PATIENTS well tolerated by debilitated patients	"...seems to be the agent of choice in patients suffering from removal disorientation, confusion, conversion hysteria and other psychoneurotic conditions occurring in old age." Smigel, J. O., et al.: J. Am. Geriatrics Soc. **7**:61 (Jan.) 1959.	Settel, E.: Am. Pract. & Digest Treat. **8**:1584 (Oct.) 1957. Negri, F.: Minerva med. **48**:607 (Feb. 21) 1957. Shalowitz, M.: Geriatrics **11**:312 (July) 1956.
IN ALLERGIC PATIENTS useful adjunctive therapy for asthma and dermatosis; particularly effective in urticaria	"All [asthmatic] patients reported greater calmness and were able to rest and sleep better ... and led a more normal life.... In chronic and acute urticaria, however, hydroxyzine was effective as the sole medicament." Santos, I. M., and Unger, L.: Presented at 14th Annual Congress, American College of Allergists, Atlantic City, New Jersey, April 23-25, 1958.	Eisenberg, B. C.: J.A.M.A. **169**:14 (Jan. 3) 1959. Coirault, R., et al.: Presse méd. **64**:2239 (Dec. 26) 1956. Robinson, H. M., Jr., et al.: South. M. J. **50**:1282 (Oct.) 1957.
IN HYPEREMOTIVE ADULTS does not impair mental acuity	"...especially well-suited for ambulatory neurotics who must work, drive a car, or operate machinery." Ayd, F. J., Jr.: New York J. Med. **57**:1742 (May 15) 1957.	Garber, R. C., Jr.: J. Florida M. A. **45**:549 (Nov.) 1958. Menger, H. C.: New York J. Med. **58**:1684 (May 15) 1958. Farah, L.: Internat. Rec. Med. **169**:379 (June) 1956.

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Overweight Is Nation's Biggest Health Problem

The nation's biggest health problem today is overweight, Dr. E. Vincent Askey, Los Angeles surgeon who took over the presidency of the American Medical Association at the annual meeting in Miami Beach in June, said recently when he was interviewed by four women in an across-the-table question-and-answer conference.

The questions and answers, which appear in the June issue of *Today's Health,* published by the A.M.A., ranged from obesity to Russian medicine.

Dr. Askey answered on-the-spot questions about any phase of health which were asked by the following four women at a conference in Chicago:

Mrs. Ron Jakes, homemaker and former school teacher, Elgin, Illinois.

Miss Norma Lee Browning, feature writer for the *Chicago Tribune.*

Mrs. W. A. Hastings, past president, National Parent-Teachers Association, Madison, Wisconsin.

Mrs. Norma Matthews, homemaker and former newspaper woman, Des Moines, Iowa.

One interviewer asked Dr. Askey, a 64-year-old Pennsylvania-born physician, what he considered was "the most important health problem facing the country today."

"Weight control," was his quick answer. "We

(Continued on Page 74)

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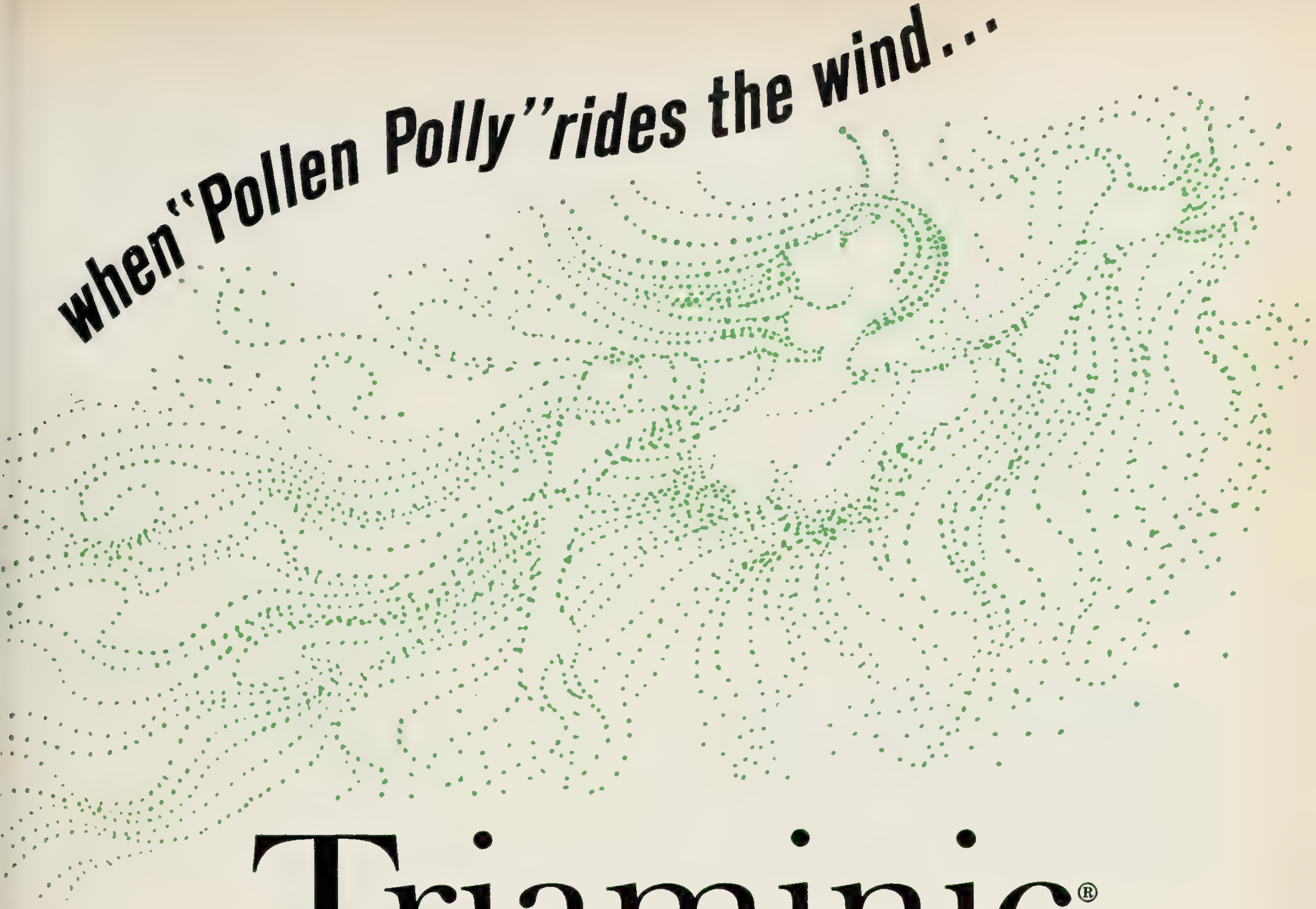
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References: 1. Fabricant, N. D.: E. E. N. T. Monthly **37**:460 (July) 1958. 2. Lhotka, F. M.: Illinois M. J. **112**:259 (Dec.) 1957. 3. Farmer, D. F.: Clin. Med. **5**:1183 (Sept.) 1958. 4. Fuchs, M.; Bodi, T.; Mallen, S. R.; Hernando, L., and Moyer, J. H.: Antibiotic Med. & Clin. Ther. **7**:37 (Jan.) 1960. 5. Halpern, S. R., and Rabinowitz, H.: Ann. Allergy **18**:36 (Jan.) 1960.

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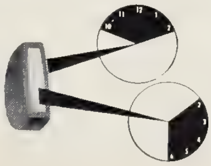

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Overweight Is Nation's Biggest Health Problem

(Continued from Page 70)

Americans are eating more and better than ever but exercising less. As a result, actuarial statistics show that an alarmingly large number of persons are seriously overweight, and obesity and long life usually don't go together."

On the question of relationship between smoking and cancer, Dr. Askey answered:

"My personal opinion is that there is a definite link between cigarette smoking and the development of lung cancer. I'm not sure, however, whether it's the whole cause or just one factor among the other lung irritants we are exposed to, such as automobile exhaust fumes and pollutants from factory smokestacks."

Dr. Askey revealed that he did not believe the Russians are "up to our standards in medicine."

"There may well be isolated fields in which they've done something we've not yet been able to do. For example, they probably have made certain important advances in the field of space medicine. But in terms of medical advances and progress which affect the total population and not just a special segment, I believe that our brand of medicine is of much higher quality."

On the question of hospital costs, Dr. Askey said that " 'costs' in a hospital are largely the costs for service—in other words, labor.

"In the old days, many employees worked 12-hour shifts or longer. Nowadays, and rightly so, most hospitals have three eight-hour shifts, five-day weeks, with double pay for week-ends and holidays. Obviously, this is one ever-increasing expense that hospital bills try to cover.

"Also, hospital costs vary, depending on the needs

(Continued on Page 82)

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*Atwater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. **Am. J. Digest. Dis.** 4:1055 (Dec.) 1959.

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BOOKS RECEIVED

(Alphabetical listing begins on Page 68)

FIRST AID—DIAGNOSIS AND MANAGEMENT—Fifth Edition—Warren H. Cole, Professor and Head of the Department of Surgery, University of Illinois College of Medicine; Surgeon-in-Chief, Research and Educational Hospitals, Chicago; and Charles B. Puestow, Clinical Professor of Surgery, University of Illinois College of Medicine and Graduate School; Chief, Surgical Service, Veterans Administration Hospital, Hines; with 16 Contributing Authors. Appleton-Century-Crofts, Inc., 35 West 32nd Street, New York 1, N. Y., 1960. 420 pages, $6.25.

FOURTH TISSUE HOMOTRANSPLANTATION CONFERENCE—Annals of the New York Academy of Sciences, Volume 87, Art. 1; Pages 1-607. Published by the New York Academy of Sciences, 2 East Sixty-third Street, New York 21, New York, 1960. 607 pages, $5.00.

FUNDAMENTALS OF CLINICAL HEMATOLOGY—Byrd S. Leavell, M.D., Professor of Internal Medicine; Physician-in-charge, Hematology Section, School of Medicine, University of Virginia; and Attending Physician, University of Virginia Hospital; and Oscar A. Thorup, Jr., M.D., Associate Professor of Internal Medicine, School of Medicine, University of Virginia; and Attending Physician, University of Virginia Hospital. W. B. Saunders Company, Philadelphia, 1960. 503 pages, $10.00.

HAEMOLYTIC ANAEMIAS, THE—Congenital and Acquired. Second Edition—Part I, The Congenital Anaemias—J. V. Dacie, M.D. (Lond.), F.R.C.P. (Lond.), Professor of Haematology, University of London (Postgraduate Medical School of London). Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 339 pages, $7.00.

HANDBOOK FOR RECREATION—CHILDREN'S BUREAU PUBLICATION NO. 231—Revised 1959, U. S. Department of Health, Education, and Welfare, Social Security Administration, Children's Bureau, 1960. For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 75 cents. 148 pages.

HEAD, NECK, AND TRUNK, THE—Muscles and Motor Points—2nd Edition—Daniel P. Quiring, Ph.D., Late Head of the Anatomy Division, Cleveland Clinic Foundation and Associate Professor of Biology Western Reserve University. Revised and Edited by John H. Warfel, Ph.D., Assistant Professor of Anatomy, The University of Buffalo, School of Medicine, Buffalo, New York. Lea & Febiger, 600 Washington Square, Philadelphia 6, Pa., 1960. 124 pages, 109 illustrations, $3.25.

I PRESCRIBE LAUGHTER — Thomas Richard Rees, M.D. Vantage Press, Inc., 120 W. 31st Street, New York 1, N. Y., 1960. 111 pages, $2.75.

IMPROVING PATTERNS OF LANGUAGE USAGE—Ruth I. Golden, English Department, Detroit Central High School. Wayne State University Press, Detroit 2, Michigan, 1960. 196 pages, $2.95.

INJURIES OF THE BRAIN AND SPINAL CORD AND THEIR COVERINGS—4th Edition—Edited by Samuel Brock, New York University. Springer Publishing Company, Inc., 44 East 23rd St., New York 10, N. Y., 1960. 739 pages, $18.50.

INTRAARTERIAL INFUSION OF PROCAINE IN THERAPEUTIC PRACTICE — N. K. Gorbadei. With a supplement—The Treatment of Patients with Hypertension by Intraarterial Infusion of Procaine Solution by I. I. Velikanov. Translated from the Russian. Consultants Bureau Enterprises, Inc., 227 West 17th Street, New York 11, N. Y., 1960. 135 pages, $7.50.

(More on Page 85)

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Overweight Is Nation's Biggest Health Problem

(Continued from Page 74)

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In discussing the fields of general practice and that of specialists, Dr. Askey said that "the tremendous scientific developments in medicine have made it absolutely necessary for us to have specialists," but he added that "the biggest medical mistake many people make is not having a family physician —a man they can rely upon for general advice."

"The family doctor," he said, "can treat about 85 or 90 per cent of the illnesses we know and when he can't he will recommend the right specialist or consultant."

One interviewer asked Dr. Askey this question: "With the fantastic increase in population at both ends of the life scale, is the supply of physicians keeping pace with the country's growing medical needs?"

Dr. Askey answered:

"That's certainly a timely question. Up to now, doctors of medicine have increased at about the same rate as the population. Moreover, the efficiency of the doctor has increased, too, so that with new drugs and techniques he can treat greater numbers of patients in less time.

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BOOKS RECEIVED

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LIST METHOD OF PSYCHOTHERAPY, THE—Elizabeth Sher, Eleanor Messing, Theodora Hirschhorn, Enis Post, Annette Davis, and Arthur Messing—with an Introduction by Jacob S. List. Philosophical Library, 15 East 40th Street, New York, N. Y., 1960. 258 pages, $7.50.

MANUAL FOR EXAMINATION OF PATIENTS—School of Medicine and North Carolina Memorial Hospital, The University of North Carolina, Chapel Hill, N. C., Kerr L. White, M.D., Chairman. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago 11, 1960. 231 pages, $4.50.

MANUAL OF HAND INJURIES—2nd Edition—H. Minor Nichols, M.D., Clinical Instructor in Surgery, University of Oregon Medical School, Portland; and Member of American Society for Surgery of the Hand; American Association for the Surgery of Trauma; Western Surgical Association; Societe Internationale de Chirurgie. Foreword by Michael I. Mason, M.D. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 400 pages $11.00.

MANUAL OF TROPICAL MEDICINE, A—Third Edition—George W. Hunter, III, Ph.D., Col. U.S.A. (Ret.), Lecturer in Microbiology, College of Medicine and Biological Sciences, University College, University of Florida, Gainesville, Florida; William W. Frye, Ph.D., M.D., Sc.D. (Hon.), Professor of Tropical Medicine, Dean, School of Medicine, and Vice-President, Louisiana State University, New Orleans; and J. Clyde Schwartzwelder, Ph.D., Professor of Medical Parasitology, Louisiana State University, School of Medicine, New Orleans, Louisiana. W. B. Saunders Company, Philadelphia, 1960. 892 pages, 323 illustrations, 8 in color, $15.00.

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MEDICAL PHYSICS—Volume III—Editor, Otto Classer, Ph.D., Diplomate in Radiological Physics, American Board of Radiology; Professor of Biophysics, Frank E. Bunts Educational Institute; Head, Department of Biophysics, Cleveland Clinic Foundation; Member, Council on Medical Physics, American Medical Association. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 754 pages, $25.00.

MEDICAL RESEARCH AND THE DEATH PENALTY—A Dialogue—Jack Kevorkian, M.D. Vantage Press, Inc., 120 W. 31 Street, New York 1, N. Y., 1960. 75 pages, $2.50.

MEDICAL, SURGICAL, AND GYNECOLOGICAL COMPLICATIONS OF PREGNANCY—Edited by Alan F. Guttmacher, M.D., Obstetrician and Gynecologist-in-Chief, The Mount Sinai Hospital, New York; and Joseph J. Rovinsky, M.D., Assistant Attending Obstetrician and Gynecologist, The Mount Sinai Hospital, New York. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 619 pages, $16.50.

NINE MONTHS' READING—A Medical Guide for Pregnant Women—Robert E. Hall, M.D. Illustrated by Robert Demarest. Doubleday & Company, Inc., Garden City, New York, 1960. 191 pages, $2.95.

NUMERICAL PROPERTIES OF FUNCTIONS OF MORE THAN ONE INDEPENDENT VARIABLE—Annals of The New York Academy of Sciences, Volume 86, Art. 3; pages 677-874. Published by the New York Academy of Sciences, 2 East Sixty-third Street, New York 21, New York, 1960. 874 pages, $3.00.

OFFICE ASSISTANT, THE—In Medical Practice—Second Edition—Portia M. Frederick, Instructor, Medical Office Assisting, Long Beach City College; and Carol Towner, Director of Special Services, Communications Division, American Medical Association. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1960. 407 pages, $5.25.

PARDON MY SNEEZE—2nd Edition—The Story of Allergy—Milton Millman, M.D., Fellow American College of Allergists; Member American Academy of Allergy; and Past President San Diego Biomedical Research Institute. Kuchirka Books, P. O. Box 8144, San Diego 2, Calif., 1960. 215 pages, $4.00.

POSTURAL FITNESS — Significance and Variances — Charles LeRoy Lowman, M.D., Sc.D., F.A.C.S. Chief of Staff Orthopedic Hospital, Emeritus; Director School, Physical Therapy, University of Southern California; and Carl Haven Young, Ed.D., C.C.T., F.A.A.P.M.R., Professor of Physical Education, University of California, Los Angeles. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 341 pages, 61 illustrations, $7.50.

P-Q-R-S-T—A Guide to Electrocardiogram Interpretation—Fourth Edition—Joseph E. F. Riseman, M.D., Assistant Clinical Professor of Medicine, Harvard Medical School; The Macmillan Company, 60 Fifth Ave., New York 11, N. Y., 1960. 168 pages, $6.50.

PRIMER OF ELECTROCARDIOGRAPHY, A—Fourth Edition, thoroughly Revised, with 286 Illustrations—George E. Burch, M.D., F.A.C.P., Henderson Professor of Medicine, Tulane University School of Medicine; Physician-in-Chief, Tulane Unit, Charity Hospital; and Travis Winsor, M.D., F.A.C.P., Assistant Clinical Professor of Medicine, University of Southern California Medical School; and Director, Heart Research Foundation, Los Angeles. Lea & Febiger, South Washington Square, Philadelphia 6, Pa., 1960. 293 pages, $5.00.

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THYROID-VITAMIN APPROACH TO CHOLESTEROL ATHEROMATOSIS AND CHRONIC DISEASE, THE: A Ten-Year Study—Murray Israel, M.D., Medical Director Vascular Research Foundation; with a Foreword by Henry L. Russek, M.D., Consultant in Cardiovascular Disease, U. S. Public Health Service Hospital, Staten Island, New York. Distributed by the Vascular Research Foundation, 1175 East 156th Street, New York 59, New York, 1960. 132 pages.

Drugs Reduce Hospitalization Of Schizophrenics

Psychotherapeutic drugs have reduced the rate of hospitalization among patients with major psychiatric illnesses, a study showed today.

A study on the ability of drugs to prevent hospitalization conducted by a group of researchers at the State University of New York, Downstate Medical Center, Brooklyn, New York was reported in the *Journal of the American Medical Association.*

The subjects were 173 schizophrenic outpatients. They underwent brief psychiatric interviews for periods up to 18 months. At the same time they were given at random either a drug (promazine hydrochloride or chlorpromazine hydrochloride) or a placebo, an inactive substance, on a double-blind basis. Drug treatment "was associated with significantly lower rates of hospitalization than placebo usage," the researchers said.

Hypnosis to Overcome Fear Is Hazardous for Some

Hypnosis should not be used to overcome fear or other symptoms in a person with a serious personality defect, Dr. Monte J. Meldman of Des Plaines, Illinois, warns.

"Hypnosis is effective for symptom removal," he wrote in the May 28 *Journal of the American Medical Association.*

"Symptom removal can be hazardous, however, and should not be used when the symptom is related to an obsessive-compulsive system or to a serious personality, character, or ego defect."

Dr. Meldman said hypnosis is not entirely innocuous. Unless cases are selected with care and therapy is wise, he said, hypnosis may result in symptoms more serious than those for which the patient was originally treated.

He related the case of a 41-year-old man who had a fear of flying. The man consulted a hypnotist, who cured him of this fear. However, on the day following his first flight after seeing the hypnotist, he developed strong feelings of despondency. He lost his

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appetite and became jittery, eventually remaining in bed, trembling and afraid to move.

During the man's subsequent hospitalization, Dr. Meldman said the patient's past history, which the hypnotist did not take, showed that he was not a proper subject for hypnotic therapy.

The patient's history showed that the airplane phobia was "obviously related to some more central issue," he said. The hypnotist should have refused hypnotic symptom suppression as a method of treatment and advised the patient either to live with this relatively minor inconvenience or to seek therapy to uncover the underlying cause of his fear.

"As emphasized many times before, an adequate history and diagnosis are essential to the use of hypnotherapy, as is knowledge of psychodynamics and personality structure," Dr. Meldman concluded.

Plump Child Grows Faster, Matures Earlier

A plump child generally grows faster and matures earlier than a slender child, a study showed today.

This conclusion was drawn from a study of 259 Ohio-born boys and girls which was reported in the June *Journal of Diseases of Children*, published by the American Medical Association.

"Childhood fatness results in accelerated growth and advanced maturation in both sexes," according to Stanley M. Garn, Ph.D., and Joan A. Haskell, B.A., Fels Research Institute, Yellow Springs, Ohio.

"Though body size in childhood is obviously determined by many variables, among them parental stature, accumulated fat is clearly related to size superiority during the growing period. It is not unreasonable to conclude, therefore, that an excess of calories is growth-accelerating, with the degree of acceleration related to the energy surplus."

Between the ages of one-and-a-half and 12-and-a-half, children above the average in fat were advanced in height by approximately half a year's growth, the study showed.

The relationship between fatness and body size was more marked among girls, the authors said, perhaps because of a wider range of fatness found in the female.

Referring to chubby children, they said, "their developmental acceleration carried them to earlier puberty, on the average, and to earlier cessation of linear growth."

Increased fat storage is associated with advanced body development during prepuberty and early puberty, they added.

The two researchers said they undertook the study because of current interest in overnutrition or supernutrition, repeated reports that more and more American children are obese, and the lack of data on children who are only moderately fat.

The youngsters studied ranged from one-and-a-half to 17-and-a-half years of age and were not selected on the basis of fatness.

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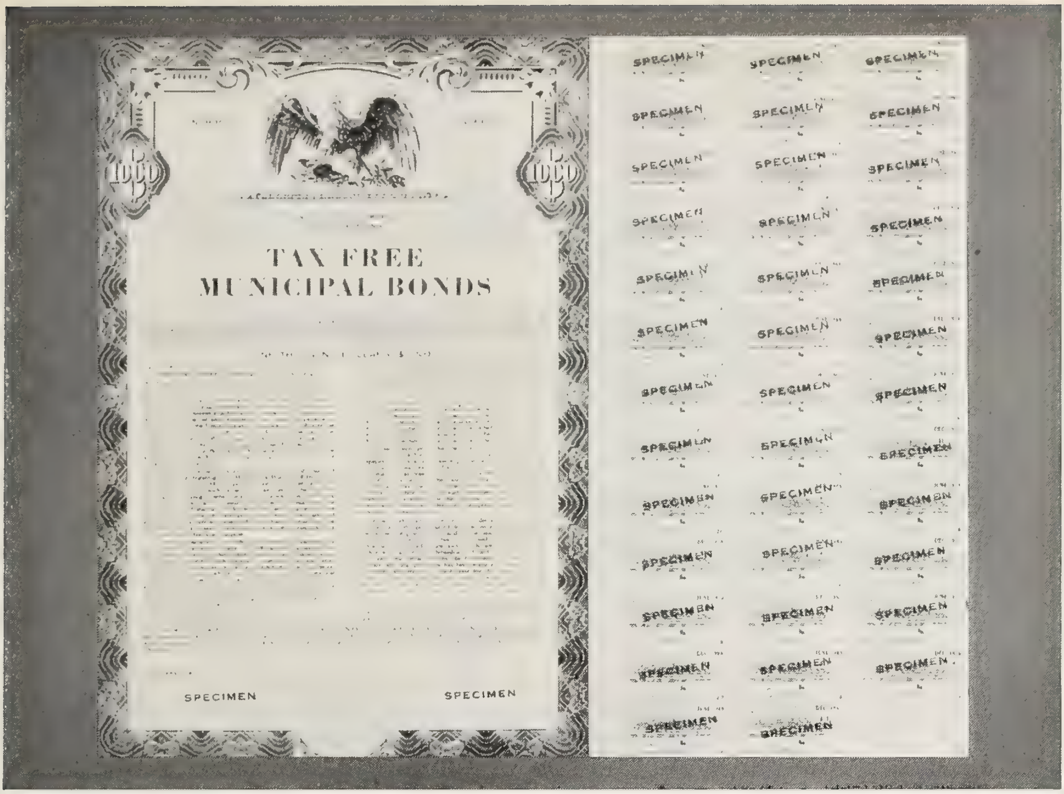

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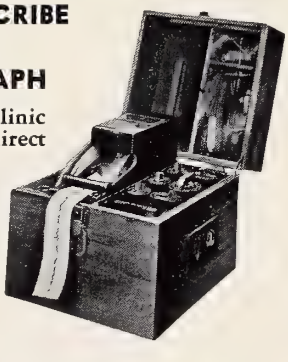

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Men Found to Adapt Rapidly to Simulated Satellite Rotation

Six men have demonstrated a surprisingly rapid adjustment to two-day tests in a room rotating in a manner that may be used to launch large satellites, it was reported recently.

A report on the unique experiment by Dr. Ashton Graybiel director of the U.S. Naval School of Aviation Medicine, Pensacola, Fla., and the medical officer who was in charge of the Able-Baker monkey flight, is contained in the July *Archives of Neurology*, published by the American Medical Association.

Four volunteers at a time were locked inside the circular room, 15 feet in diameter and 7 feet high, for two days while it was rotated at a constant speed. In six separate experiments the room was rotated at velocities ranging from 1.71 to 10 revolutions per minute.

The speeds were chosen to sample the range which might be used in orbiting satellite vehicles with a radius of 25 to 100 feet, Dr. Graybiel said.

During the experiment, the subjects were called upon to perform certain tests. The rest of the time they spent eating, sleeping, reading, listening to a radio, and talking.

All the subjects except one, who had lost the function of the sensory organs of the inner ears, developed unpleasant symptoms, primarily discomfort, apathy, visual illusions, and nausea. In some instances the symptoms were so severe that the subject was unable to carry out any useful tasks, he said.

However, he said, "the degree and rapidity with which symptoms decreased or disappeared astonished both the experimenters and the subjects.

"In general, adaptation began in a matter of hours, and great improvement was observed by the end of the first day when the symptoms were mild and by the end of the second day when severe.

"This adaptation response emphasizes the extraordinary manner in which the central nervous system effects a readjustment to a discrepant sensory input [the rotation], enabling the previously disturbed functions to operate effectively and probably normally for the new conditions."

Some symptoms reappeared after termination of rotation, Dr. Graybiel said, but these usually were much less prominent than during the onset of rotation, and readaptation occurred "rather quickly."

The findings have practical value, inasmuch as the velocities used were in the range of speed of rotation of manned radar platforms, and also may be in the range of speed of rotation which may be used to launch satellites in the future, he said, adding:

"The method would be useful in selection, indoctrination, and preconditioning of personnel."

He also said, it "holds promise in the study of the etiology and control of motion sickness."

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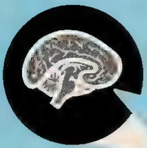

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Cold Mattress May Prevent Damage To Brain After Heart Stops

A water-cooled mattress may be able to prevent brain damage which usually results from a lack of oxygen when the heart stops beating for more than a few minutes.

The successful use of such a technique, termed hypothermia, on a two-year-old girl is reported in the June 4 *Journal of the American Medical Association.*

The case was described by Drs. Emanuel Feldman, Burton Rubin, and Sylvan N. Surks of New Hyde Park, Long Island, N. Y., who said the child showed no mental deterioration in tests six months after the incident.

The patient's heart stopped beating while undergoing an examination of the windpipe. After manual massage, the heart resumed spontaneous beating. However, the child was in a semi-comatose state. A water-cooled mattress was then applied which dropped the patient's body temperature from 100.4 to 91.4 Fahrenheit.

Forty-eight hours later, the child began to respond to questioning and the mattress was removed. Five days later she regained full consciousness.

"Six months later she was submitted to a battery of psychological tests by a psychiatrist and psychologist," the authors said. "These tests indicated the patient to be a bright, well-adjusted child with scores which were normal or above normal."

An insufficiency of oxygen in the brain (cerebral hypoxia) causes direct injury to the brain's nerve cells and cerebral swelling, the physicians explained. Hypothermia is designed to prevent brain damage by decreasing cerebral metabolism and cerebral swelling, they said.

"It would appear that the prompt institution of hypothermia was largely responsible for this complete recovery from severe cerebral hypoxia," they concluded.

However, they added that this single case report "permits no valid conclusion to be drawn until control studies can be undertaken."

The three physicians are associated with the department of anesthesiology, Long Island Jewish Hospital.

Staphylococci Resistance to Penicillin Shows No Rise

The resistance of staphylococci bacteria to penicillin has remained virtually constant during the past five years, a recent study showed.

The study was reported by three Seattle physicians in the June 4 *Journal of the American Medical Association.*

Staphylococci cause the majority of superficial, pus-forming infections in man and also are respon-

(Continued on Page 23)

Staphylococci Resistance to Penicillin Shows No Rise

(Continued from Page 20)

sible for certain infections of the lungs, long bones, and kidneys. In recent years, staphylococcal infections have assumed increasing importance because of a tendency to become resistant to antibiotics.

Several years ago studies in many parts of the world revealed that more than half the strains of the staphylococcus family found in hospitalized patients were resistant to penicillin, streptomycin, and tetracycline, the *Journal* commented editorially.

"This led to the fear that staphylococcic infections would become untreatable because of the development of resistance to each new antibiotic as it appeared," the editorial said.

The study reported by Drs. Alfred W. Bauer, David M. Perry, and William M. M. Kirby showed that within the period 1955 through 1959 resistance to penicillin changed but little from the level of 60 to 80 per cent previously recorded.

Resistance to streptomycin remain stable at about 55 per cent, they reported.

The study also confirmed reports that chloramphenicol had much less effect in inducing the emergence of resistant strains than did the other antibiotics tested.

(Continued on Page 37)

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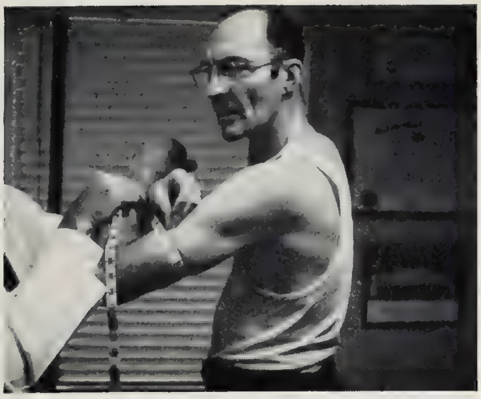

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Mare Sole Producer of Vaccine For Black Widow's Bite

An old black mare "with technical assistance" has become the world's sole manufacturer of a vaccine to counteract the venom of the black widow spider.

The mare's role in medicine is described in an article in the August *Today's Health* magazine concerning drug manufacturers who, despite financial loss, supply medicines vitally needed by only a limited number of persons. The magazine is published by the American Medical Association.

Once termed a failure as a plow horse, the mare gained her unique distinction in the hands of scientists at Merck, Sharp & Dohme Laboratories, Philadelphia.

To make the vaccine, laboratory workers first collect the insects. Then the venom is removed, processed, and injected into the mare which reacts by producing protective antibodies against the poison. Finally, these antibodies are removed from the mare's blood stream for use in treating the 1,500 persons who are bitten by the lethal black widow each year.

"No pharmaceutical company, not even the largest among the 1,300-odd United States firms that compete with each other, can possibly be active in all areas of advancing therapy or furnish more than a limited number of specific drugs," the article pointed out.

"Thus, many vital drugs are manufactured by only one or two firms which accept the continuing responsibility of furnishing little-known medicines for which there is no profitable mass demand."

The article was written by Donald G. Cooley.

Staphylococci Resistance to Penicillin Shows No Rise

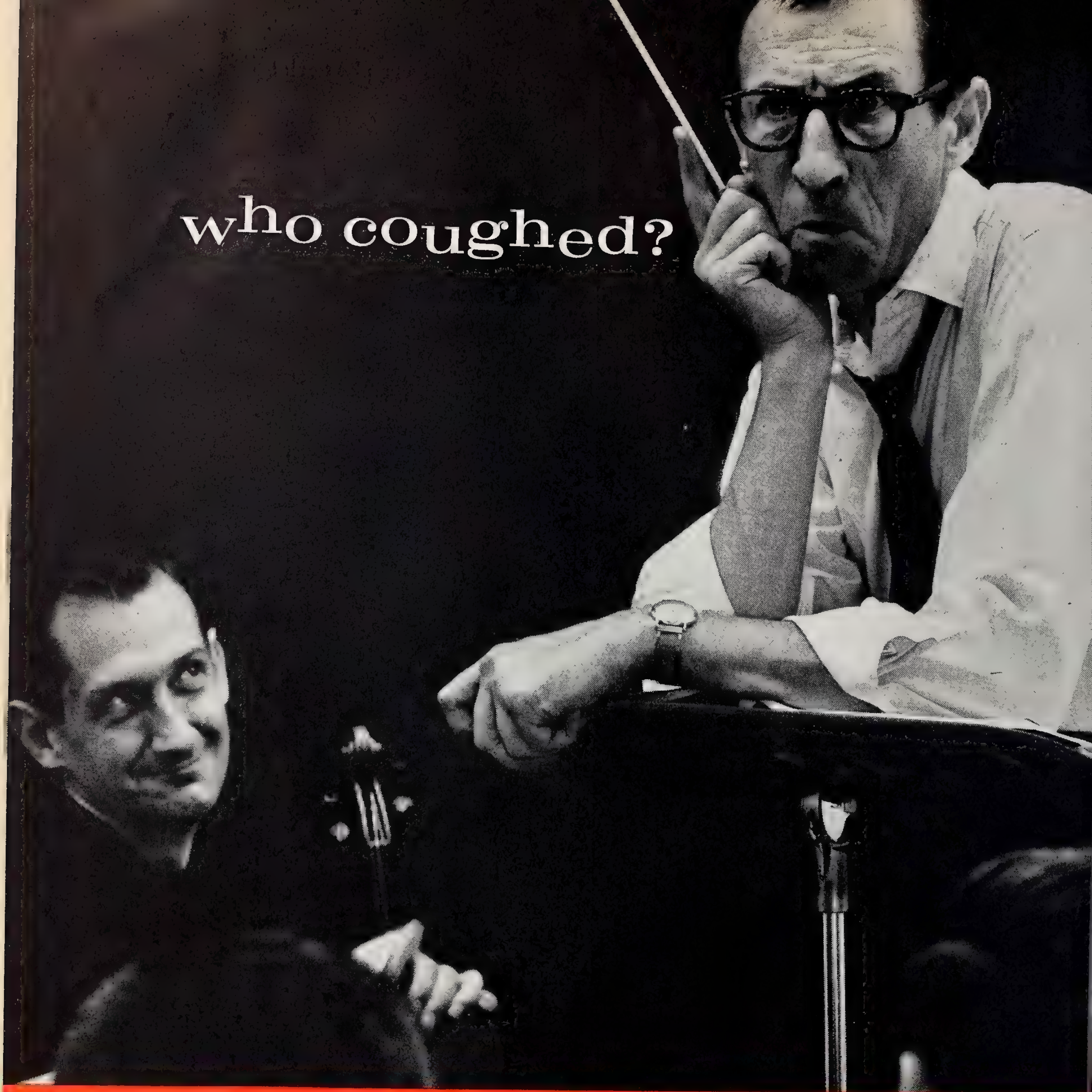
(Continued from Page 23)

The findings also supported the concept that the greater the amount of a drug consumed the greater the likelihood of encountering resistant strains.

The study was conducted among patients hospitalized and treated at Kings County Hospital in Seattle using a technique whereby a given staphylococci germ could be tested for its resistance against 12 to 15 antibiotics.

The *Journal* editorial pointed out that when an infecting organism is resistant to penicillin, streptomycin, and tetracycline, the physician still has other drugs to choose from, among them chloramphenicol.

"Studies of this sort are of great interest, but do not settle the question whether restriction of various antibiotics should be a routine policy in hospitals," the editorial concluded. "It is rather doubtful whether, aside from use of antibiotics only where they are actually indicated, the restriction of any one or a group of antibiotics is necessary at present."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Nervous and Calm Persons Equal Candidates for Hypertension

The highly nervous, overactive type of person probably is not any more susceptible to high blood pressure than his calmer contemporary, according to a Cleveland physician.

Dr. Irvine H. Page, director of research of the Cleveland Clinic Foundation, said in an article in the June *Today's Health,* published by the American Medical Association, that there are "many highly nervous, overactive persons who don't have any hypertension.

". . . in many patients, the hypertension is coming from the kidneys and not from their nervous systems," he said. "This is an important, newly-discovered facet of the disease."

We now realize that many persons whose high blood pressure was believed due to an unknown cause actually have a kidney ailment of a type that can be corrected surgically, he said.

Dr. Page said he believed that generally the kidney is responsible for more hypertension than any other single system of the body.

He also pointed out that while the kidney can provoke high blood pressure it can also control it.

"The kidney is the provocative organ in the sense that we believe it secretes an enzyme which acts on a constituent in the blood to produce a third substance, which we call angiotensin," he said. "We think angiotensin is the cause of high blood pressure of kidney origin, or at least part of the mechanism which causes this condition.

"As a protective organ, the kidney has a means of destroying this blood pressure raising principle."

Dr. Page also said he doubted that there was a very close relationship between the incidence of high blood pressure and the so-called strains of modern-day living.

(Continued on Page 65)

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New Drying Agents Prove Effective Against Acne

Two new lotions which dry, peel, and degerm the skin of persons with the common form of acne have proved effective in clinical tests.

"The use of these drying agents, as adjuncts to the usual therapeutic routine, resulted in improvement of acne lesions in 873 of 909 patients," according to an article in the May 7 *Journal of the American Medical Association.*

The new agents (Fostril Lotion and Fostril HC Lotion) do not sensitize or stain the skin, it said.

The *Journal* said the best results were observed in patients who had unusually severe oiliness of the skin while blond patients with thin and not too oily skin experienced the less favorable results and most of the irritating reactions.

Fifty-one patients reported an initial slight irritation to the treatment, but on later applications their skins appeared to have become conditioned to the lotion, it was pointed out.

Girls could use the lotion as a makeup base, the article said, a thin film to match blond skin and a heavier film for brunets.

Authors of the article are Drs. Samuel M. Bluefarb, department of dematology, Northwestern University Medical School and Cook County Hospital, Chicago; Charles L. Schmitt, department of dermatology, School of Medicine, University of Pittsburgh, and Charles M. Howell Jr., department of dermatology, Bowman Gray School of Medicine, Wake Forest College, Winston-Salem.

Nervous and Calm Persons Equal Candidates for Hypertension

(Continued from Page 52)

"Stress, of course, is a very difficult thing to evaluate," he said. "What is stress to one person is not stress to another. So it is awfully hard to assume, for instance, that our generation is under more stress than any other generation."

Considering past generations, he said, there must have been stresses during the Wars of the Roses "and it must have been pretty stressful trying to build a pyramid in ancient times."

Hypertension, he said, is well on the way toward being corrected and in some cases the causes successfully treated. However, he added, the disease still is in "a very active phase of research" and "we have a long way to go to complete our understanding of it."

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1. Griffith, R. S.: Comparison of Antibiotic Activity in Sera Following the Administration of Three Different Penicillins, Antibiotic Med. & Clin. Therapy, *7*:No. 2 (February), 1960.

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Rubella Arthritis

A Study of Twenty Cases

PHILIP R. LEE, *M.D.*, ANNA F. BARNETT, *M.D.*, JOHN F. SCHOLER, *M.D.*, SERGIUS BRYNER, *M.D.*, and WILLIAM H. CLARK, *M.D.*, Palo Alto

• Twenty patients, five males and fifteen females, who had rubella arthritis were observed for periods ranging from one to ten years after recovery.

Rubella arthritis in these patients was characterized by polyarthritis associated with fibrositis, myalgia, paresthesias and muscular weakness. All of the male patients but only one-third of the females had involvement of the knee joints. The small joints of the hands were the joints most commonly affected in women. Post-rubella arthritis rheumatic symptoms, especially fibrositis, persisted for many months in almost half of the females, not at all in the males.

The leukocyte content of the blood tended to be low and the erythrocyte sedimentation rate accelerated in the few patients in which determinations were done.

Latex tests were performed in 17 patients. Ten of the 17 were studied with the three-stage technique of Hall. Results of inhibition tests were positive in 80 per cent of the patients with rubella arthritis studied who were tested within 18 months after the onset of illness. None of the patients tested 18 months or more after rubella arthritis had positive reaction.

ALTHOUGH ARTHRITIS is one of the most common complications of rubella it has attracted little attention in the American medical literature.[4,8] Our interest in this disease was stimulated by the recent report of Johnson and Hall[8] and by the observation of 20 patients with rubella arthritis at the Palo Alto Medical Clinic during the last ten years.

The clinical manifestations of rubella arthritis are variable in character, severity and duration, but certain features are commonly observed.[1,2,4,6-17] Rubella arthritis has rarely been observed in children before puberty and it affects women far more frequently than men. The symptoms in the joints usually appear with or after the onset of the rash, they may persist for two to fourteen days and they do not produce permanent joint deformity. The joints most frequently affected are: Small joints of the hands, the wrists, knees, ankles and toes. Rarely are the hips and shoulders involved. Pain is a prominent feature and may be associated with fibrositis and joint tenderness with only slight joint swelling. Migratory polyarthritis has been observed, but more commonly the symptoms persist in the joints initially involved. The symptoms that may be noted in addition to arthritis include weakness, paresthesias, lumbago, sciatic nerve pain and fibrositis. Fever is not usually associated with rubella arthritis but a secondary rise in temperature may occur coincident with the onset of arthritis.

The treatment of patients with rubella arthritis has generally been restricted to rest, local heat and salicylates. Usually the symptoms subside promptly

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From the Department of Internal Medicine, Palo Alto Medical Clinic, Palo Alto.

and it is difficult to evaluate the results of therapy in most patients.

The only complications that appear to be directly related to rubella arthritis are monarticular arthritis, myalgia, fibrositis and arthralgia.[9,13] These symptoms may persist or recur intermittently after rubella arthritis.

Results of routine laboratory tests in patients with rubella arthritis have seldom been noted in the published reports. In uncomplicated rubella, leukopenia occurs early and the cell count then promptly returns to normal. The erythrocyte sedimentation rate stays within a normal range in uncomplicated rubella.[17]

Latex tests were performed on ten patients with rubella arthritis and seven patients with uncomplicated rubella by Johnson and Hall.[8] Two of those with uncomplicated rubella and nine with rubella arthritis had positive results when euglobulin-inhibition reactions were studied.

RESULTS

Many of the classical features of the disease were noted in the 20 patients with rubella arthritis that we observed (Table 1). In all the male patients the knee joints were affected, while this occurred in only one-third of the female patients. The joints most commonly affected in the females were the small joints of the hands and the wrists. The clinical diagnosis of rubella arthritis was made only in patients who had objective joint swelling in addition to the complaints of joint pain and stiffness. Patients who had only arthralgia with rubella were not included in the study.

Common symptoms associated with rubella arthritis in this group of patients were fibrositis, myalgia, paresthesias and weakness (Table 2). Only one patient was specifically noted to have a secondary rise in temperature.[8]

Seven of the female, but none of the male, patients had residual rheumatic symptoms after recovery. Two of these patients had preexisting arthritis, but the others had no evidence of arthritis. The commonest residual symptom was fibrositis (four patients), while one woman had persistent arthralgia, one had monarticular arthritis in a previously asymptomatic osteoarthritic finger joint and a third had a flare-up of previously quiescent (five years) rheumatoid spondylitis (Table 2).

Although rheumatic fever is known to occur in association with streptococcal infection complicating rubella[1] we found no clinical or laboratory evidence of streptococcal infection in our patients. Follow-up observations were made on all the patients for a minimum of one year and no clinical evidence of the usual sequellae of rheumatic fever was noted.

TABLE 1.—*Clinical Features in 20 Patients with Rubella Arthritis*

1. Sex: Female—15 Male—5
2. Age: 14 to 47 years
3. Joints affected:

	No. of Cases
Small joints of the hands	17
Knees	10
Wrists	7
Feet	5
Ankles	4
Elbows	3
Shoulders	2

4. Onset of arthritis after rash: 0 to 3 days.
5. Duration of joint symptoms: 2 to 14 days

TABLE 2.—*Associated Symptoms and Complications in 20 Patients with Rubella Arthritis*

	No. of Cases
1. Associated symptoms:	
Fibrositis	8
Myalgia	3
Paresthesias	3
Muscular weakness	1
Fever	1
2. Complications:	
Persistent fibrositis	4
Persistent arthralgia	1
Flare-up osteoarthritic joint	1
Flare-up rheumatoid spondylitis	1

Therapy in 17 patients was limited to rest, local heat and salicylates. Result varied from no effect to moderate relief of joint symptoms. One patient received prednisolone for ten days and the patient with the persistent monarticular arthritis received a local injection of hydrocortisone. The systemic steroids and phenylbutazone produced excellent symptomatic relief while the local injection was of only transient benefit.

Routine laboratory tests were performed infrequently during the acute illness. In four patients the number of leukocytes per cu. mm., determined at the time of joint symptoms, were 6,350, 5,400, 4,700 and 4,000. The erythrocyte sedimentation rates (Wintrobe) in three patients with uncomplicated rubella arthritis were 40, 26 and 23 mm. in one hour. These accelerated rates all returned to normal limits after recovery. In the patient with rheumatoid spondylitis the erythrocyte sedimentation rate was 51 mm. in one hour at the time of the rubella arthritis, and six months later it was 23 mm. in one hour. In addition to routine laboratory tests we occasionally obtained throat cultures, antistreptolysin titers, preparations for lupus erythematosus cells, and serum protein electrophoresis. These were normal or negative in all patients tested.

Latex tests were performed in 17 patients.* Ten of the 17 were studied with the three-stage technique of Hall,[5] in which the patient's serum, the euglobulin fraction and the euglobulin-inhibition test are

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*Latex tests were performed in our own laboratory and through the courtesy of Dr. Arthur Hall, Robert Breck Brigham Hospital, Boston.

TABLE 3.—*Results of Latex Tests in Rubella Arthritis*

Patient	Age	Sex	Date of Rubella	Date of Test	Serum	Euglobulin	Inhibition
1	35	F	Dec. 27, 1958	Oct. 30, 1959	0	0	+
2	46	F	June 1, 1958	Oct. 30, 1959	0	0	+
3	42	F	May 15, 1958	Oct. 30, 1959	0	0	+
4	28	F	May 7, 1958	Oct. 30, 1959	0	0	+
5*	42	F	June 23, 1958	Oct. 30, 1959	0	0	0
6	46	F	April 21, 1958	Oct. 30, 1959	0	0	0
7	18	M	April 8, 1958	Oct. 30, 1959	0	0	0
8	38	M	March 1, 1958	Oct. 30, 1959	0	0	0
9	47	F	June 10, 1957	Oct. 30, 1959	0	0	0
10	24	F	Feb. 20, 1955	Oct. 30, 1959	0	0	0
11	41	M	March 15, 1949	Oct. 30, 1959	0	0	0

* Rheumatoid spondylitis.

used. Blood specimens obtained from these patients from ten months to ten years after they recovered from rubella arthritis were studied in Hall's laboratory (Table 3). Results of tests using the patient's serum and euglobulin fraction were negative in all patients studied in Hall's laboratory. Result of euglobulin-inhibition tests were positive in four of the ten patients studied. These patients were all females and all had had rubella arthritis less than 18 months before the testing. In all the patients, including the three males, who were tested 18 months or more after the occurrence of rubella arthritis, the results of euglobulin-inhibition tests were negative. One patient with rheumatoid spondylitis and rubella arthritis had a negative euglobulin-inhibition test when studied 16 months after she had had rubella arthritis. All of the 17 patients studied in our own laboratory had negative results of latex tests using the patient's serum. Sensitized sheep cell agglutination tests (using F-11 coated tanned sheep cells) for rheumatoid factor were performed on the sera of ten patients† from three weeks to four years after the occurrence of rubella arthritis and only one of the patients (Case 3, Table 3) had a positive result: Three weeks after rubella arthritis, F-11 agglutination titer was 1:896, three months later it was 1:224 and seventeen and a half months later it was negative. This patient was one of the four in whom the result of the euglobulin-inhibition test was positive.

DISCUSSION

Based on our own observations, and those previously reported, rubella arthritis can be characterized as a self-limited polyarthritis affecting young adults, particularly females, and usually persisting for from two to fourteen days. We have found leukopenia and an elevated erythrocyte sedimentation rate in the few patients studied. The clinical picture in males and females appears to differ in that all the male patients we have observed have had involvement of the knee joint while this is uncommon in females. The latter usually have involvement of the small joints of the hands, an infrequent occurrence in males.

Recurrent or persistent rheumatic complaints, particularly fibrositis, myalgia and arthralgia, occurred in almost one-half of our female patients and in none of the male patients. These symptoms have been noted by others,[9,13] but this striking sex difference was not previously commented upon.

Recently, Johnson and Hall[8] reported the results of a study of ten patients with rubella arthritis and seven with uncomplicated rubella by means of latex tests. In patients with rubella arthritis they found no positive results using serum alone, but positive results in two cases by using the euglobulin fraction of the patient's serum and positive results in nine cases by use of the euglobulin-inhibition technique described by Hall.[5] In the patients with uncomplicated rubella results of tests using serum alone were negative, as were those in which the euglobulin fraction was used, but two of the seven had positive results by euglobulin-inhibition tests. These patients were studied after intervals of from three days to seven months after the onset of rubella. In our patients, tests using Hall's technique[5]* were performed after intervals of eleven months to ten years after the onset of rubella. In our group of patients 80 per cent of the females studied within 18 months of rubella arthritis had positive euglobulin-inhibition test results while none of the patients studied longer than 18 months after rubella had a positive result. These results suggest that a high percentage of patients with rubella arthritis will have positive euglobulin-inhibition tests initially and that these will tend to become negative with the passage of time. Johnson and Hall[8] suggested that this phenomenon might represent a nonspecific alteration of serum protein to infection rather than the presence of actual rheumatoid factor in the serum of patients with rubella arthritis. Virus infections seem particularly likely to produce such alterations in serum proteins, Dresner and Trombly[3] finding that 29 of 35 patients with a variety of viral infections (none had rubella) had positive reaction to euglobulin-inhibition tests.[3] Johnson and Hall,[8] however, as previously noted, reported the results of inhibition tests positive in only two of seven patients with uncomplicated rubella but in nine of ten patients who had rubella arthritis. However, since the rubella patients with uncomplicated disease were all studied approximately four months after the onset, whereas the patients with rubella arthritis were studied at various intervals—as early as three days to as long as six months after the onset of illness—differences in lapse of time after the acute phase may have been a factor in the differences in results. It may be noted in this regard that Dresner and Trombly[3] found that the agglutinating factor or factors disappear when the pathogenetic mechanisms cease to operate, as by remission or cure of the causative disease. Whether or not the presence of arthritis can be related to the presence of agglutinating activity by the euglobulin-inhibition technique will await further study of patients with uncomplicated rubella as well as those with rubella arthritis.

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†The F-11 agglutination test, using sensitized sheep red blood cells coated with F-11 globulin, is one of the tests for the so-called rheumatoid factor. The tests were performed in the Laboratory of Dr. Wallace Epstein, University of California Medical Center, San Francisco.

*Tests performed through the courtesy of Arthur P. Hall, M.D., Robert B. Brigham Hospital, Boston.

Palo Alto Medical Clinic, 300 Homer Avenue, Palo Alto (Lee).

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Hypoparathyroidism

Medical and Surgical Aspects

ALEX GERBER, *M.D.*, Alhambra

• Hypoparathyroidism is almost invariably a complication of operation on the thyroid gland, and the diagnosis usually presents no problem. Fairly good control of the symptoms is possible by medical management, but, since substitution therapy is not available, the treatment of hypoparathyroidism is not completely satisfactory. Parathyroid homografting has been attempted; at present, however, grafting procedures must be considered experimental.

HYPOPARATHYROIDISM is essentially a complication of surgical operation on the thyroid gland. Buchwalter[5] reported a 3 per cent incidence of permanent parathyroid deficiency in a series of 600 thyroid operations at a university hospital. The incidence of this complication in any series probably depends largely upon the proportion of operations performed for carcinoma of the thyroid. Less important causes of parathyroid tetany are congenital absence of the parathyroid glands, idiopathic hypoparathyroidism and a transient stage following the removal of a parathyroid adenoma.

The subtotal removal of parathyroid tissue during the course of thyroidectomy may lead to symptoms of hypoparathyroidism of a few days' to a few weeks' duration which readily respond to antitetany therapy. It is the plight of patients after inadvertent extirpation of all the parathyroid glands that is the concern of this paper. They may be reduced to pathetic states if available therapy is ineffective.

The crucial factor is the elimination of the parathyroid hormone, with the resultant changes in calcium and phosphorus metabolism. The production of ionized calcium, which plays an important role in regulating neuromuscular irritability, is dependent upon the integrity of the parathyroid glands and adequate absorption of calcium from the gastrointestinal tract. The parathyroid hormone maintains constant serum calcium and phosphorus levels by governing the renal threshold for phosphates. Hypoparathyroid tetany, due to an elevation of serum phosphate and a lowering of serum calcium, leads to body alterations involving the nervous system and epithelial structures.

The milder forms of postoperative tetany due to partial removal of the parathyroid glands, results in insidious complaints secondary to increased neuromuscular irritability. The tetany following complete removal of the parathyroids, however, is characteristically explosive in onset: Shortly after operation on the thyroid gland—usually within 24 hours—the patient becomes apprehensive and complains of tingling of the fingers and toes. Carpopedal spasm quickly follows, and if treatment is not begun, the patient may die of generalized convulsions and laryngospasm.

After the patient is nursed through the acute state, chronic tetany remains. Primarily neuromuscular in origin, the symptoms include weakness, lethargy and somnolence. Moreover, during periods of stress all the symptoms of acute tetany may reappear. Sometimes, psychosis develops; rarely roentgenological examination reveals calcification of the basal ganglia of the brain.[4] In cases of long standing, changes in the epithelial structures occur. Transverse ridging of the finger and toenails and a susceptibility to fungus infections of the skin and mucous membranes are of periodic annoyance. A more serious complication is the formation of presenile cataracts.[4,5]

Interestingly, partial relief of the symptoms of hypoparathyroidism may occur with the onset of pregnancy,[3] the fetal parathyroid glands apparently being capable of sustaining the mother to some degree.

The diagnosis of parathyroid tetany presents no problem unless the characteristic onset is delayed. Theoretically this occurs when most of the parathyroid tissue is surgically removed and the blood supply to the remainder is damaged. Thrombosis of the vessels and necrosis of the residual parathyroid tissue may result in late symptoms of hypocalcemic tetany. More often, suspicion is aroused by the typical sequence of events following operation on the thyroid gland. Latent tetany can be demonstrated by a twitching of the facial muscles when the facial nerve anterior to the ear is tapped (Chvostek's sign), or by eliciting carpal spasm on applying a tourniquet to the forearm (Trousseau's sign).

Read in part at a Symposium on Parathyroid Disorders—Diagnosis and Management; presented before the First General Meeting at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

Increased excitability of these muscles may also be demonstrated by galvanic stimulation (Erb's sign).

Laboratory tests then can be used to confirm the diagnosis. Hypoparathyroid tetany is associated with a decrease in serum calcium (normal 9 to 11 mg. per 100 cc.) and an increase in serum phosphorus (normal 2.5 to 4 mg. per 100 cc.). Urinary excretion of calcium, as demonstrated by the Sulkowitch test, decreases. More sophisticated studies of parathyroid malfunction are usually unnecessary.

TREATMENT

The treatment of hypoparathyroidism may be lifesaving if acute symptoms of tetany develop immediately following thyroid operations. The replacement of serum calcium is paramount. This is most rapidly done by injecting 10 cc. of 10 per cent calcium gluconate intravenously. The patient can then be maintained by slow intravenous drip of 10 cc. of 10 per cent calcium chloride diluted in 500 cc. of normal saline solution. Calcium chloride is too irritating to be used undiluted and will result in a serious slough if injected subcutaneously. Parathormone is used infrequently in acute tetany. Sometimes emergency tracheostomy is necessary to relieve laryngospasm unresponsive to intravenous calcium therapy.

If all the parathyroid glands have been excised, intravenous infusion of calcium cannot be discontinued until the treatment for chronic tetany is instituted. The chronic form of hypoparathyroid tetany requires treatment for an indefinite period. Prolonged therapy falls into five categories: (1) Use of drugs that increase the absorption of calcium from the gastrointestinal tract; (2) use of drugs that act on the kidney tubules, decreasing phosphate reabsorption and thus increasing the excretion of this cation in the urine; (3) adding absorbable calcium salts to the diet; (4) avoidance of calcium-binding foods, and (5) ingestion of phosphate-binding foods.

1. Vitamin D (Calciferol®), 50,000 to 200.000 units per day, is the drug of choice for increasing calcium absorption from the gastrointestinal tract. Dihydrotachysterol (AT 10, Hytakerol®) is equally effective but more expensive—one capsule (0.625 mg.) per day is the usual dose.

2. AT 10 also serves to maintain a normal serum calcium level by decreasing phosphate reabsorption by the renal tubules. Similar action on the kidney by parathormone is of less importance, since the rapid development of tolerance renders this drug valueless in clinical practice.

3. Supplemental calcium is often administered orally in the form of calcium lactate or calcium gluconate (5 to 10 gm. per day). Although containing a higher concentration of calcium, calcium chloride cannot be used in most cases because of intolerance by the gastrointestinal tract.

4. Calcium-binding foods are avoided within dietary reason. Phosphates (dairy products), and oxalates (spinach, rhubarb, chocolate) are the chief offenders.

5. Phosphate-binding drugs (Amphojel,® Gelusil®) can be used to advantage to decrease absorption from the gastrointestinal tract and thereby lower the serum phosphate level.

The surgical treatment of hypoparathyroidism starts at the operating table during operation on the thyroid gland. If parathyroid tissue can be identified in the removed specimen, the glands are immediately transplanted into the neck muscles. (Experimentally, a definite percentage of these autografts survive.[12,18]) Clinically, the value of this procedure is open to conjecture since the surgeon never is certain whether it is the graft or perhaps residual parathyroid tissue that is maintaining the patient's calcium balance. Moreover, the inadvertent removal of one or more parathyroid glands is usually not discovered until several days later when the pathologist is making a microscopic study of the specimen.

Ideally, homotransplantation of parathyroid glands is the answer to the problem of hypoparathyroid tetany. Until recently, attempts at homografting were uniformly unsuccessful[10,13] owing to immune response by the host (reportedly successful results were poorly documented). There is, of course, no genetic incompatibility when the donor and recipient are identical twins.

Among the methods attempted to delay or circumvent the immune reaction are the use of embryonic tissue for donor material,[14,19,22] ensheathing the graft in a millipore filter,[1] tissue culture techniques of delayed transplantation[8] and radiation of the host to weaken the immune response by destroying the capacity for antibody formation.[9] Perhaps the most promising method of parathyroid transplantation takes into account the theoretical decreased antigenicity of fetal tissue and the increased chances of success of vascularized grafts.[12] Sterling[20,21] reported three successful transplants with this method, using as donors full term infants that died soon after birth. Unfortunately, no other surgeon has been able to duplicate these results although apparently some of them have improved upon the operative technique.[2,6,7,11,17] In another recent case, in which a successful result was reported with the use of a vascularized fetal graft,[23] the transplant is now known to be a failure.[16]

I have transplanted a vascularized parathyroid graft, from a two-pound fetus that did not survive premature birth at six months, to a 12-year-old child. The operation was done under ideal circumstances, and the anastomosis of vessels to the host was completed within two and a half hours of the death of the premature infant. Despite an immediate "take" of the graft, as demonstrated by reexploration of the wound one week later, and early dramatic clinical improvement of the patient, the long-term result has been disappointing.

As Murray[15] pointed out, convincing proof of a successful parathyroid homograft has not been established, and it becomes increasingly apparent that a favorable outcome in this field awaits the solution to the general problem of the antigenic rejection of homografts. At present, homotransplantation of parathyroid tissue must be considered experimental.

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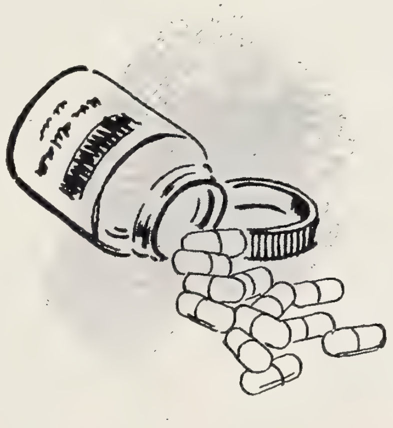

Fat and Carbohydrate Metabolism in Humans

A Study of Nutritional and Hormonal Effects

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• **As an index to the rate of fat utilization in human subjects, the recovery of all radioactive carbon dioxide in the expired air was measured for one hour following intravenous injection of palmitate-1-C^{14}. In the normal fasted subject, about 10 per cent of the injected dose was recovered, and the proportion was lowered to about 5 per cent by administration of glucose. With prolonged fasting, the recovery of radioactive carbon dioxide did not change, despite a rising concentration of fatty acids in the serum. This was interpreted as due to the development of a balance between increasing mobilization and oxidation and was thought to indicate increasing fatty acid oxidation.**

In chronic undernutrition and diabetes mellitus there was increased fatty acid oxidation due presumably to adaptation to a chronic increase in fat utilization for energy.

Administration of human growth hormone did not increase fat oxidation but prevented the usual inhibition produced by glucose. This was interpreted to mean that growth hormone increases fat utilization only indirectly by inhibiting the usual preferential utilization of glucose over fat.

ADVANCES IN KNOWLEDGE and techniques have made it possible to study in some detail the influences of nutritional and hormonal factors on metabolism in humans. New knowledge of the importance and role of fatty acids has provided a tool to study the rate of fat mobilization and utilization. New advances in instrument design have provided sensitive and reliable equipment to detect radioactive carbon dioxide coming from the lungs of normal subjects after injection of safe amounts of radioactive fatty acids. New knowledge of species specificity of growth hormone and new methods of purification have provided purified potent preparations of human growth hormone for experimental use.

In order to understand the basis and significance of the research to be presented, a background of knowledge of modern concepts of fatty acid metabolism is necessary. Long-chain fatty acids of 16 to 20 carbon length are held in fat depots as triglycerides and mobilized into the circulation when needed for energy (Chart 1). These "natural" fatty acids are chiefly oleic, linoleic and palmitic[2] and are carried in the circulation bound to serum albumin. In this form they do not cause lipemia and it is of interest that the so-called "clearing reaction" results from the action of heparin to break down triglycerides in the circulation to fatty acids which are bound by serum albumin.[6]

The fatty acids are found in the serum in low concentrations after meals, varying from 0.3 to 0.5 mEq. per liter (8 to 12 mg. per 100 cc.) and rise gradually with prolonged fasting to 1.5-2.0 mEq. per liter (40 to 50 mg. per 100 cc.). Despite the low concentrations the fatty acids can provide a large number of calories for energy because they so rapidly leave the circulation (half-time about 2 minutes)[7] and are quickly burned to carbon dioxide. After intravenous injection of palmitic acid labeled with carbon^{14}, radioactive carbon dioxide appears in the expired air within 2 minutes. It has been found that mobilization of fatty acids from the depots into the circulation is influenced by many nutritional and hormonal factors. As described above, as fasting is prolonged, there is a gradual rise in the content of fatty acids in the blood, presumably to provide fat for fuel in greater amounts. This implies that the mixture of foods used by the body with prolonged fasting consists of increasing amounts of fat. Early demonstration of decreasing respiratory quotient with fasting, approaching 0.7 characteristic of fat oxidation, supports this concept.

The availability of carbohydrate is intimately associated with the mobilization of fatty acids, and this may account for the rise that occurs as fasting is prolonged and carbohydrate stores are depleted. In untreated diabetes, a situation in which the cells of the body cannot use glucose, the concentration of fatty acids in the blood is elevated. Following glucose administration, the concentration of fatty acids in the blood falls and remains low for 2 to 3 hours due to inhibition of mobilization of fatty acids from the adipose depots. Administration of insulin results in a prompt decrease in fatty acid concentration (Chart 1).[1] If the blood sugar falls too low, resulting in epinephrine release from the adrenal medulla, there is a sharp but transient rise in blood fatty acids (Chart 1). The concentration may rise

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Department of Medicine, UCLA Medical Center, Los Angeles.

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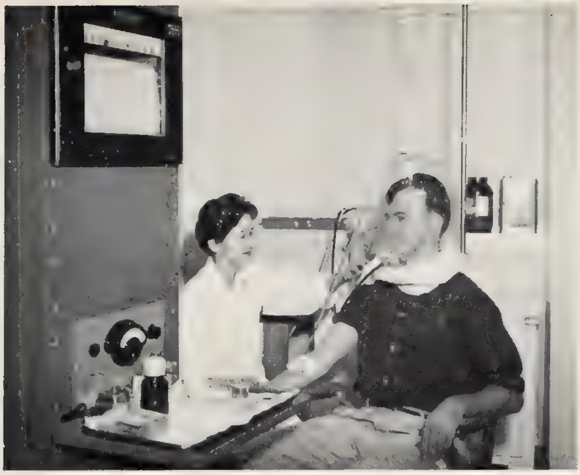

Figure 1.—Apparatus for measurement of radioactive carbon dioxide after intravenous injection of carbon labeled fatty acids.

to several times the starting level but usually falls back by the end of one hour.[5] Epinephrine directly stimulates release of fatty acids from adipose tissue, even *in vitro*, and thus the effect is direct. It is probable that the occasional occurrence of fatty liver, lipemic serum and eruptive xanthomata seen in poorly controlled diabetes results from excessive and prolonged mobilization of fatty acids. These may go to the liver, where they are held in ester form, filling the liver with fat, and be released back into the circulation as triglycerides producing lipemia.

The effects of growth hormone on fatty acid utilization were selected for study since in acromegalic humans and in animals treated with growth hormone there is a change in metabolism. This is characterized by deposition of new protein, enhanced catabolism of fat and depressed utilization of carbohydrate. These studies were undertaken in order to learn more of the mechanism of these changes in metabolism.

In the studies to be described the recovery of total radioactive carbon dioxide in the expired air during the hour following intravenous injection of a tracer dose of labeled fatty acid was used as an index to the rate of fat utilization. The fatty acid used was palmitate labeled with carbon^{14} in the carboxyl position. It was bound to human serum albumin by dissolving 1 millimol palmitate-1-C^{14} acid (Research Specialties Co.) in warm KOH and adding 0.5 millimol Cutter human serum albumin (salt poor). The sterile solution was injected intravenously through an indwelling needle in an antecubital vein from which specimens of blood were obtained for measurement of fatty acid concentration. A helmet was placed over the head of the subject (Figure 1) and a stream of compressed

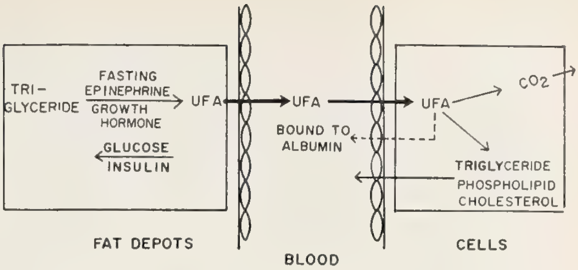

Chart 1.—Scheme of movement of fatty acids (UFA) from fat depots into circulating blood and into liver. Some factors which affect these steps are given.

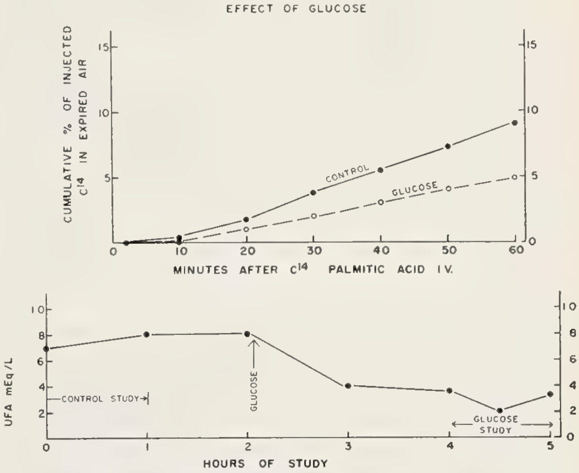

Chart 2.—Shown in the upper part of the chart is the per cent of the injected tracer dose of palmitic acid appearing as carbon dioxide before and after glucose administration. The lower part gives serum fatty acid (UFA) concentration during the period of the entire study.

air carried expired air into an ionization chamber which continuously measured the carbon^{14} content of the chamber. The radioactivity was recorded continuously by a pen writer, making it possible to calculate at any time how much of the administered dose had been oxidized. It was not possible in these experiments to measure the carbon dioxide content of the air in the ionization chamber for calculation of the specific activity of the expired carbon dioxide. Hence these results must be considered to be preliminary.

RESULTS

Normal control and effect of glucose: The cumulative outflow of $C^{14}O_2$ from a normal young subject during the hour after intravenous injection of a tracer of palmitate is shown in Chart 2. The curve labeled *control* was obtained in the morning in the fasted state. The lower curve labeled *glucose* was obtained during the hour beginning 4 hours later and following 2 hours of glucose administration which was continued during the hour of the second

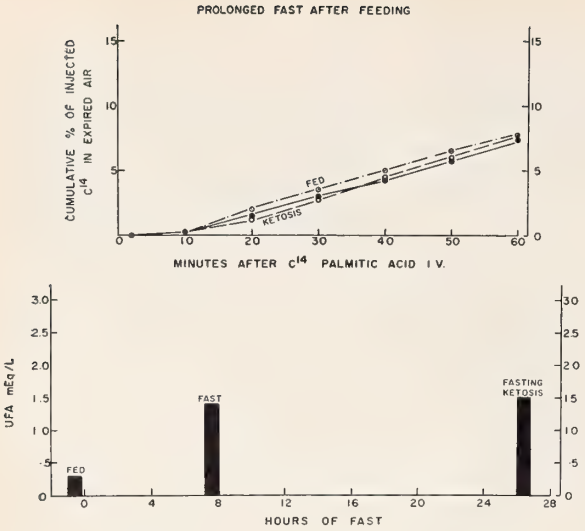

Chart 3.—Results of three studies of fatty acid (UFA) oxidation in a normal subject—the first in the morning after breakfast and glucose, the second in the afternoon and the third the following afternoon.

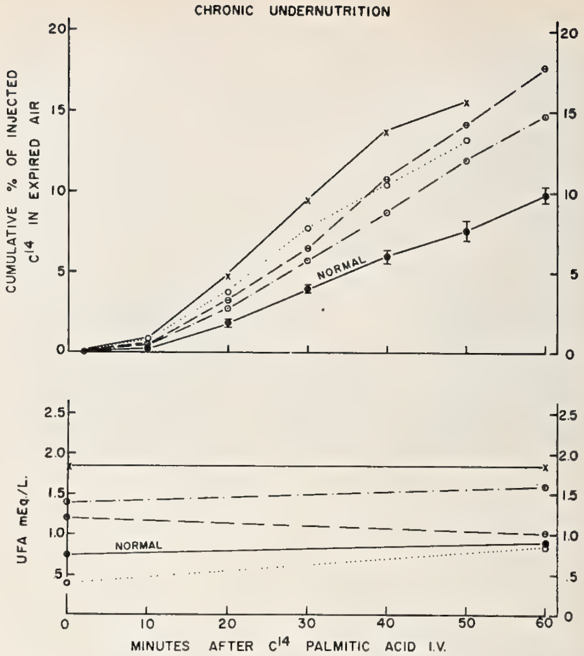

Chart 4.—Fatty acid oxidation studies in four chronically undernourished patients compared with the results in normal subjects. The serum concentration of fatty acids (shown in the lower part of the chart) are mostly above normal.

study. A total of 200 gm. of glucose was given—100 gm. orally and 100 gm. intravenously. These results, which are typical of other similar studies, reveal that glucose administration lowers the outflow of radioactive carbon dioxide to about one-half the control value. The lower part of the chart gives the fatty acid concentration in mEq. per liter of serum. The concentration rose slowly on fasting but decreased sharply following glucose administration.

Prolonged fasting: The results of a series of studies on a normal subject are shown in Chart 3. The first study was made in the morning after breakfast and glucose administration. The subject was then fasted and the second study was conducted in the afternoon. Fasting was continued and the final study took place the following afternoon. By the time of the third study starvation ketosis was present, as manifested by 4+ acetone in the urine. The recovery of radioactive carbon dioxide was the same in all three studies. The bars on the lower part of the chart show the rising concentration of fatty acids in the blood. These results were interpreted to mean that as fasting is prolonged, the pool of fatty acids is enlarging; thus recovery of the same amount of the tracer from a larger pool indicates increasing oxidation of fatty acid. The recovery of the tracer is the same because there is a balance between the increasing pool size and the increasing rate of oxidation of fatty acids.

Chronic undernutrition: The rate of oxidation of the tracer dose of palmitate was studied in four patients who were chronically undernourished (Chart 4). Of these, two had intestinal malabsorption, one diabetes and one cancer. The curves of

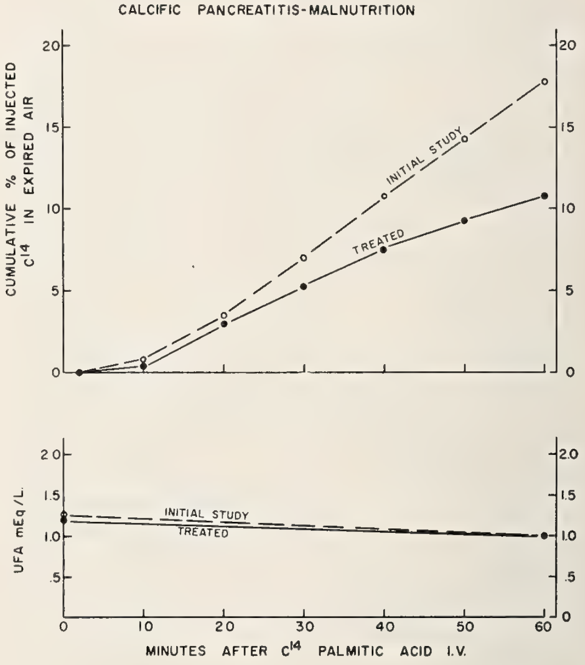

Chart 5.—Results of oxidation studies in a patient with calcific pancreatitis before and nine days after treatment with insulin and pancreatic enzymes. Serum concentrations of fatty acids (lower part of chart) were unchanged.

cumulative recovery of $C^{14}O_2$ are all much higher than the normal curve. Shown in the lower part of the chart is the amount of fatty acid in the blood at the beginning and at the end of each study. In most cases these amounts were above normal. These results were interpreted to indicate that these patients had adapted to chronic undernutrition and the use of adipose stores for fuel, by an increased rate of fat utilization.

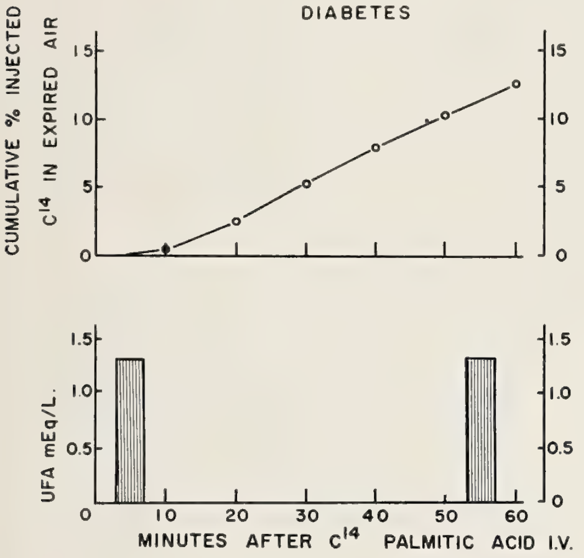

Chart 6.—Average of three patients with diabetes mellitus 24 hours after last dose of insulin. Output of $C^{14}O_2$ (upper) and the serum content of fatty acid (UFA) are above normal.

One of these patients, with malabsorption due to calcific pancreatitis, was restudied after nine days of insulin and pancreatic enzyme therapy. The recovery of $C^{14}O_2$ after treatment (Chart 5) was within normal limits and was not much more than half the amount before treatment. Shown at the bottom of the chart are the blood fatty acid concentrations, which were unchanged.

Diabetes: The proportion of injected $C^{14}O_2$ recovered from expired air of three patients with diabetes mellitus was significantly higher than for a normal subject. Chart 6 shows the average for the three patients. In the lower part of the chart are the average concentrations of the fatty acids in the blood at the beginning and end of the study. These are also higher than normal. These results suggest that patients with diabetes who are poorly controlled will have elevated content of fatty acid in the blood and will oxidize fats at an accelerated rate due to adaptation to fat utilization. Such a conclusion must be tentative in view of the small number of patients and the lack of specific activity measurements.

Effects of growth hormone: An example of results of preliminary studies on the effects of growth hormone on palmitate oxidation is shown in Chart 7. At the upper left part of the chart are the curves of

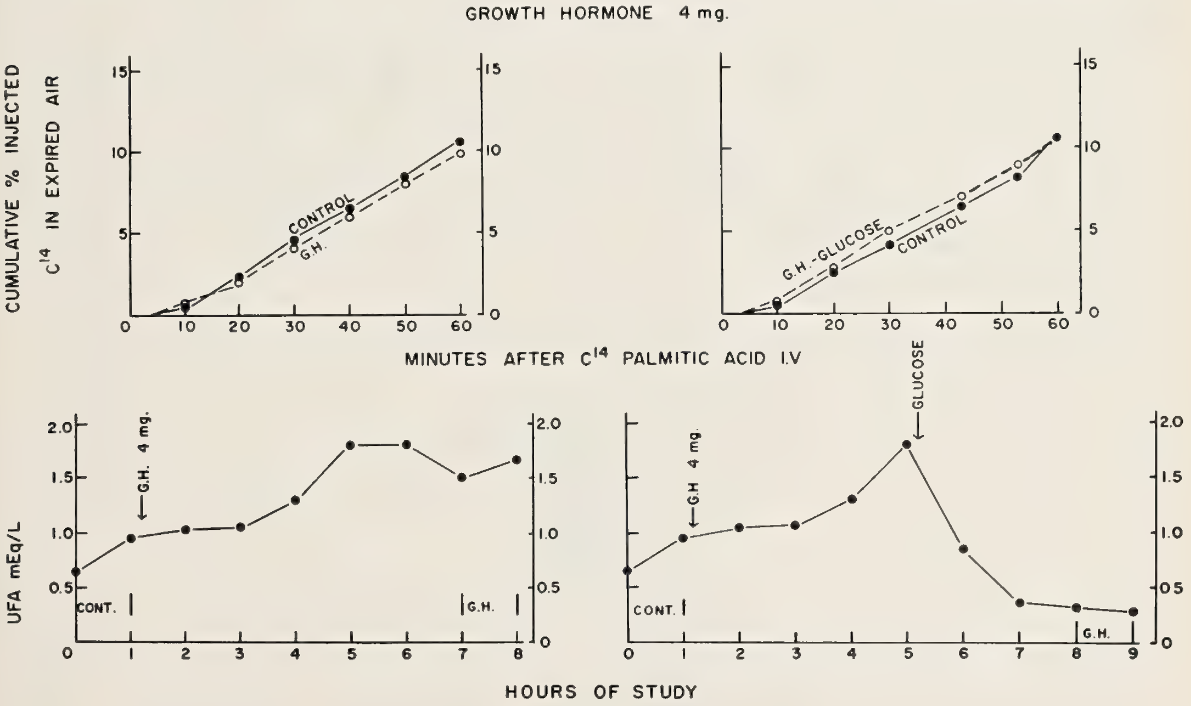

Chart 7.—Effects of human growth hormone on fatty acid oxidation (upper left) and serum concentration (lower left). Effects of growth hormone and glucose (upper right) on fatty acid oxidation and on serum fatty acid concentration (lower right).

outflow of $C^{14}O_2$ before and 7 hours after intramuscular injection of 4 mg. of human growth hormone prepared by Raben.* The curves are not different. Below are shown the fatty acid concentrations in the blood, first the slow rise due to fasting and then the rapid rise due to the fat mobilizing property of growth hormone. The right upper part of the chart shows the result of a similar series of studies with, however, the administration of glucose beginning 3 hours before the second study. In contrast to the usual result of glucose administration (Chart 2), there was no fall in $C^{14}O_2$ recovery from glucose after growth hormone administration. The lower part of Chart 7 shows the usual decrease in the blood content of fatty acid which follows glucose administration. These results were interpreted to mean that growth hormone does not directly increase fatty acid oxidation but increases fat utilization by inhibiting the usual preferential utilization of glucose.

DISCUSSION

These preliminary studies suggest that this technique for measuring the rate of fat utilization in humans yields valid information. The inhibition of fat oxidation by glucose confirms earlier work in rats,[8] dogs[4] and humans.[3] Thus it appears that the organism subsisting on a mixed diet will preferentially use carbohydrate, and that administration of carbohydrate inhibits both the mobilization of fatty acids from depots into the blood (thus lowering the amount of these acids in the blood) and the oxidation of fatty acids by the peripheral tissues. The inhibition of oxidation is more severe, so that even with a smaller pool of fatty acids much less of the isotope is recovered. The studies of malnutrition and diabetes suggest that in states of chronic undernutrition or underutilization of carbohydrate the organism adapts by developing the ability to use fat at a more rapid rate.

Growth hormone administration did not increase the rate of fatty acid oxidation as measured by this technique. However, after growth hormone was injected the usual preferential utilization of glucose was blocked. This suggests that the effects of growth hormone to increase catabolism of fat are indirect and secondary to the inhibition of carbohydrate utilization. These studies must be extended and confirmed in order to establish the validity of this hypothesis.

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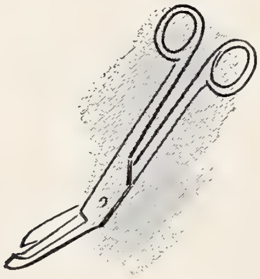

Ruptured Aneurysm of the Abdominal Aorta

ROY COHN, *M.D.*, Stanford University

• There is a sufficient time lag between leakage from an abdominal aneurysm and the final exsanguinating hemorrhage in most cases so that the diagnosis can be established and surgical treatment instituted.

Under these circumstances technical methods have been developed sufficiently satisfactorily so that a much better salvage rate can be expected.

Four consecutive successful cases are reported as examples.

CONSIDERING the ever-present danger of rupture, surgeons generally now look upon elective operation for resection aneurysm of the abdominal aorta, even without symptoms, as entirely justifiable. When the aneurysm has ruptured, operation is mandatory.

Studies of case histories show that fortunately, many aneurysms leak before the final exsanguinating hemorrhage. In fact in some instances in which the aneurysm first ruptures posteriorly, a false sac may form and the final rupture not take place until weeks after the first symptom of leakage. Thus alertness on the part of the physician who first sees the patient is the single most important factor in saving the patient's life, since operating during the stage of leakage greatly increases the chances of successfully removing the aneurysm.

The following four cases, in which the first signs of leakage were observed from four hours to 20 days before the patient entered the hospital, form the basis of this report.

CASE 1. A 63-year-old white man with an old history of tuberculosis of the lungs was admitted July 9, 1958, with complaint of severe pain in the left hip of 30 days' duration. He was known to have a small abdominal aortic aneurysm, first observed some two years previously. Examination of x-ray films taken at that time showed erosion of the anterior body of the third lumbar vertebra and calcification in the aorta compatible with the diagnosis of aneurysm.

The patient held his left leg flexed. No mass could be felt on abdominal examination. No other abnormalities were noted on physical examination or in results of laboratory examination.

On July 29, 1958 a laparotomy was done and the aneurysm was found to have ruptured into the left retroperitoneal space, forming a false sac involving the psoas muscle. The major portion of the aneurysm was resected and continuity restored with a Teflon® graft.

After a long and stormy course including aneurysmal formation at the site of the endarterectomy of the common femoral artery and wound infection, the patient recovered and was discharged January 1, 1959.

CASE 2. A 59-year-old white man was referred for treatment of a ruptured abdominal aneurysm. The patient was known to have had a pulsating mass in the abdomen for two years. Six months before admittance to hospital he had had a mild stroke. Thirty-six hours before entering the hospital he noted severe steady abdominal pain radiating to the middle of his back. When examined on entering, the patient was in severe pain and a tender pulsating mass was felt in the abdomen. Blood pressure was 180/100 mm. of mercury. At operation the peritoneal cavity contained 1,500 cc. of free blood. The point of rupture was just below the left renal artery. The aneurysm was resected and a graft placed to restore continuity.

The patient was discharged on the eleventh postoperative day.

CASE 3. A 62-year-old white man was referred with a diagnosis of ruptured aneurysm of the aorta. For one week before entry the patient had noted severe right lower quadrant pain which radiated to the right testicle. Coincidentally, severe pain in the back developed. The patient was first seen by a urologist, who noted an abdominal mass and found no urological abnormality. Except for the tender mass, no abnormalities were noted on physical examination.

At operation, a retroperitoneal hematoma extending from above the renal arteries down into the pelvis was observed. The aneurysm was removed and continuity restored with a graft. Considerable difficulty was encountered in the blood vessel bed distal to the disease, making endarterectomy necessary in both extremities. Once the lower vessels were satisfactorily cleaned out, no further circulatory complications were noted. The patient was discharged on the twelfth postoperative day.

From the Department of Surgery, Stanford University School of Medicine, Palo Alto.

Submitted July 26, 1960.

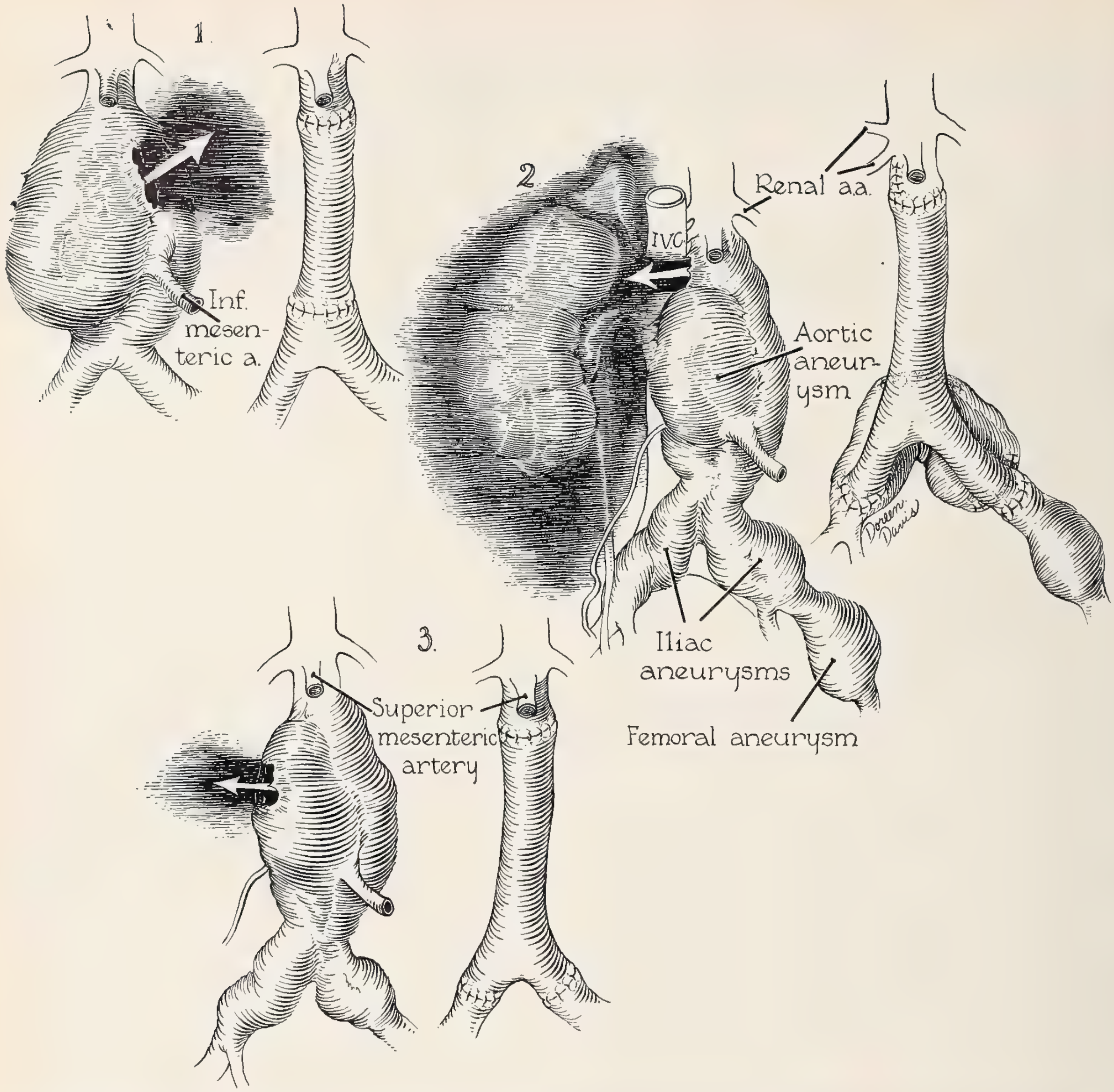

Figure 1.—(1) Site of rupture in Case 2, (2) Site of rupture with placement of graft in Case 4, (3) Site of rupture in Case 3.

Case 4. The patient, a 68-year-old white man, was referred from the emergency ward, which he had entered in a state of shock four hours after the onset of severe abdominal pain. The patient had previously had a grafting procedure for insufficient circulation in the right leg. The operation was unsuccessful, necessitating amputation three months later.

On examination, shock was obvious. The abdomen was rigid, and no masses could be felt. No right femoral pulse could be felt and the left femoral pulse was weak. Transfusion of blood was started at once. An intravenous pyelogram showed the right kidney displaced anteriorly and laterally. A diagnosis of ruptured aneurysm of the aorta was made.

At operation a freely bleeding tear in the aorta was seen, and there was about 2,000 cc. of free blood in the abdomen. The aorta was clamped above the renal branches until sufficient length of aorta below that level could be prepared to accept the graft. The renal branches were occluded 23 minutes. It was then noted that there were aneurysms of both iliac arteries and the left femoral artery. The distal ends of the graft were anastomosed to the common femoral arteries just below the take off of the hypogastric branches, leaving the iliac aneurysms intact. Tracheostomy was done at the conclusion of the operation.

Pneumonitis and ileus complicated recovery. At no time was there any problem with urinary excretion. After slow recovery the patient was discharged on the sixteenth postoperative day.

DISCUSSION

Rupture of an abdominal aortic aneurysm is rather rare. According to the calculations of Burch and DePasquale,[3] aneurysms rupture in only about 25 per cent of cases. Their data showed 2,450 deaths from ruptured aneurysm in one year in the United States as compared with 452,507 deaths due to arteriosclerotic heart disease. They said that autopsy statistics in the New Orleans area showed the mortality rate from resection (27 per cent) was higher than the mortality rate from rupture (24.7 per cent).

The reported salvage rate from operation done after rupture has occurred is about 60 per cent. The usual report of operations done in this emergency includes only a few cases—even the reports from clinics reporting the largest series of unruptured aneurysms treated surgically.*

The largest and most recent series of cases of ruptured aneurysm is that reported by McKenzie[8]: Fourteen of 27 patients operated upon died.

The diagnosis of rupture of an aneurysm is not difficult if the pulsating mass has been noted in previous examinations. If there is no history of a mass, the severity of the pain, the distribution of referred pain to the back and extremities, roentgenographic visualization of calcifications at the site of the lesion, displacement of the kidneys and ureters as noted on pyelogram, and obliteration of the psoas shadow suggest the diagnosis. In a discussion of early diagnosis Beebe and coworkers[2] described areas of ecchymosis on the lower abdominal wall due to the leakage of blood retroperitoneally.

After the diagnosis has been established and adequate amounts of blood are available for transfusion, the patient is taken to the operating room, where a catheter is inserted into the urinary bladder. The abdomen is opened through a midline incision from xiphoid process to pubis. The bowel is displaced into a plastic bag, care being taken to avoid traction or pressure on the bowel, and held out of the abdomen during the course of the operation. If the aneurysm is actively bleeding (as in Case 2 and Case 4 in the present report) control of the proximal aorta must be rapidly established. Merendino[9] and Savage[10] expressed belief that the best way to reach it is through the thorax by extension of the upper margin of the skin incision, but in the four cases herein reported this was not necessary. Even in Case 4, in which the rent in the aorta was at the level of the renal arteries and the aorta had to be cross-clamped above this level, the exposure was sufficient to permit pushing the vena cava aside and placing the clamp.

Once bleeding has been controlled from above, it is necessary to isolate the common iliac arteries from below to arrest back bleeding and to prevent the dislodgment of the clot within the aneurysmal sac into the distal circulation. The aneurysmal sac is then opened, the clot evacuated, and the sac cut away. That portion of the sac on the posterior and medial surface adjacent to the vena cava can be left behind without harm if it appears that it is too adherent to the vena cava or vertebral fascia. If the proximal clamp has been placed above the renal branches, as was necessary in Case 4, it is usually necessary to prepare the proximal aorta just below the branches by removing the debris and leaving enough adventitia so that when the clamp is moved below the renal arteries there is still a margin below the clamp to which the prosthesis can be sutured. The inferior mesenteric artery is usually occluded. In Case 4, it was patent. The patient in that case was the only one in whom there was any question about the viability of the left colon. He passed a little bloody mucus on the third postoperative day but had no further suggestion of damage to the bowel.

There was no back bleeding from intercostal arteries in these cases.

After excision of the aneurysm, it is sometimes necessary to perform endarterectomy on the iliac or femoral vessels. In Case 4, in which multiple aneurysms were present, the lower iliac aneurysms were left in place and the prosthesis was sutured to the common femoral artery.

Various types of synthetic prosthetic materials or homografts can be used. The author has found Teflon® grafts to be very satisfactory. The graft is preclotted before insertion—a very important point in preventing extensive leakage from the graft surface after removal of the clamps. It is then sutured in place by the standard vascular technique, using 4.0 silk, the anastomosis being made under slight tension. The clamps are released slowly while dry gauze is held firmly around the artery at the graft site. After five to ten minutes the surface bleeding stops spontaneously and inspection can be made for leaks. Appropriate suturing may be done at any point from which blood may be pulsing.

The distal pulses are then inspected. If the pulses noted preoperatively have not returned or the extremity is cold, the lower vessels must be opened and clot removed. Repeated efforts may be necessary. The author has done bilateral lumbar sympathectomy in every case on a purely empirical basis, feeling that it may offer some protection from the intense vasospasm which is frequently present following prolonged cross-clamping of the aorta. Sometimes the lower pulses do not appear until the second postoperative day. The bowel is inspected as it is returned to the abdomen. The abdominal wall is then closed in the routine fashion.

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*References 1, 4, 5, 7, 12.

During the course of the operation, the distal vessels are irrigated with heparin solution every 15 minutes, small volumes of diluted heparin being used. No anticoagulates are used postoperatively.

Invariably after operation a moderate ileus from the extensive retroperitoneal dissection is present. If the patient is decidedly hypertensive, the systolic pressure is kept at about 140 mm. of mercury by administration of trimethaphan camphorsulfonate (Arfonad®).

The circulation of the extremities is carefully observed in the immediate postoperative period. Circulatory insufficiency would require reopening of the vessels to remove clot. While the author has sometimes had this problem to deal with after aortic or iliac thromboendarterectomy, it was not encountered in any of the four cases in the present report.

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The Guillain-Barré Disease Complex

An Analysis of the Disease with Therapeutic Suggestions and Report of 26 Cases

H. RICHARD McFARLAND, *M.D.*, Oakland

• The Guillain-Barré disease complex may result from a number of causes and have a wide variety of effects. The basic mechanism seems to be an immunizing or allergic reaction to many pathogens or their products, causing edema of the nerve roots in the spine, specifically about the meningeal covering. Resulting pressure on the axon causes nerve damage proportional to the severity and duration of pressure.

Results in the 26 cases here reported and in other reports indicate that corticosteroids are the treatment of choice, the purpose being to reduce edema as promptly as possible. As might be expected, this therapy is of little value in the post-inflammatory stage of the disease, although prophylactic administration should continue for several months.

Nerve and muscle rehabilitation are the chief aims of later treatment.

AMONG THE imputed causes of the Guillain-Barré disease complex, infectious diseases are most frequently mentioned, especially the viral.[18] Wilson thought in 1918 that he had cultured the causative virus,[3] but his findings have not been confirmed.[17] More recently Bergamasso and Bottiglioni reported culturing a neurotropic virus from patients with this disease, according to von Hagen, who also mentioned enzyme disturbances and toxicity such as heavy metal poisoning among imputed causes.[18] Wider afield are the associations of the disease with serum sickness, postvaccinial sequelae, antibiotic reaction, cervicodorsal arthritis, diabetes mellitus, artificial fever, serum potassium excess in renal failure and malignant growths.[12] In a case observed by the author the features typical of Guillain-Barré disease were manifested immediately after a severe electrical shock.

Some of the foregoing associations must be due to mere coincidence. In others a well-recognized causal association exists (as for example between cervical arthritis and the nerve-root involvement in Guillain-Barré disease) but does not justify fusion of these entities.[8] In the present state of knowledge it would seem best to consider as Guillain-Barré disease only those conditions in which the cause is unknown and omit those like post-diphtheritic polyneuritis and diabetic neuropathy.

The work of Sabin[14] and Haymaker[9] materially clarified the pathology of this disease. The most consistent findings occur in the proximal portion of the peripheral nervous system where the nerve roots fuse. The sequence of events according to Haymaker is as follows:

a. 1-4 days—edema of the nerve roots.

b. By 6 days—disintegration of myelin and swelling of axis cylinder.

c. By 9 days—lymphocytic infiltration along the cylinder.

d. By 11 days—phagocytosis.

e. By 13 days—proliferation of Schwann's cells.

Following this process regeneration may take place primarily in the nerve roots. However, it is felt that involvement may spread centrally from the primary site to involve the neuraxis or distally along the peripheral nerves. Indeed, in the terminal stage some of the spinal roots and peripheral nerves are completely devastated. These findings complement the clinical observation that where motor symptoms predominate the lesions are primarily in the anterior roots, and where paresthesias complicate the picture both the anterior and the posterior roots are involved.

Regarding the central nervous system the histopathologic findings are less conspicuous:

a. Moderate edema of the brain with acute brain cell changes may occur in fulminant cases.

b. Petechial hemorrhages may occur in the gray matter of the spinal cord (33 per cent in Haymaker's series).

c. Perivascular collections of lymphocytes in the white matter and subependymal tissue (20 per cent in Haymaker's series).

d. The spinal and cerebral leptomeninges may show petechial hemorrhages, hypertrophy and/or hyperplasia of fixed tissue cells. Frequently seen is engorgement of the vessels of the leptomeninges about the cord and nerve roots. Proliferative arachnoiditis about the roots is infrequently seen.

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Submitted October 27, 1959.

e. Chromatolysis of anterior horn cells (26 per cent in Haymaker's series).

f. Myelin degeneration of the spinal cord and brain stem may occur.

g. Sympathetic ganglia are reported involved by this disease[9,14] with edema and round cell infiltrates.

Cranial nerves, especially the seventh, the ninth and the tenth, may be affected in the same fashion as the peripheral nerves. The Gasserian ganglion has also been involved.

Other findings are listed below. (The order of the list is the order of frequency as reported by Sabin; the numbers at the end of the line show the number of cases in which the various involvements were reported by Haymaker.)

Heart—myocarditis	7
Kidney—lower-nephron nephrosis (questionably present in 5 additional cases)	7
Adrenals—focal necrosis	1
Muscle—degeneration and/or inflammatory change	4
Liver—focal necrosis	2
Spleen—changes are noted that are compatible with infectious mononucleosis	6

In all three of Sabin's cases he reported acute bronchitis and lobular pneumonia. Haymaker reported that 33 out of 55 patients had bronchopneumonia of hypostatic or aspiration types. These findings corroborate the clinical impression that a fatal ending is most often due to respiratory failure.

The disease is preceded in 50 to 60 per cent of the cases by a clinically apparent infectious process; in the others, it has been suggested, infection also occurs but this prodromal phase remains silent or unrecognized. The nervous system then reacts to the organism or its breakdown products in a hypersensitive manner. In effect, the nervous system reacts to an antigen in a relatively specific fashion. This concept is by no means unique; post-exanthematous encephalitides and acute encephalomyelitis are other examples of allergic reactions of the nervous system (experimental allergic encephalomyelitis). Waksman and Adams[19] were able to reproduce in rabbits a Guillain-Barré-like syndrome by injecting into them an antigenic solution containing a portion of the peripheral nerve of the rabbit. They concluded from their studies that the myelin contained a protein or antigen that specifically affected the peripheral nervous system and that acute infective polyneuritis may have an immunologic basis.

Whatever the nature of the pathogenic agent, the response of the nervous system begins with edema, primarily of the nerve roots and specifically about the meningeal covering. The aperture in the dura becomes choked by the expanded myelin and this in turn compresses the axon. This damage is compounded when the meninges become congested and further compress the radicals. Then the sequence of events previously described occurs and the nerve may either undergo degeneration, if the process continues until irreparable damage occurs, or recovery, if the edema subsides. It is not clear whether or not the edema-impingement-phenomenon is the primary damaging factor or whether cellular reactive degeneration goes on along the entire length of the peripheral nerve.

There is no unanimous agreement on the pathogenesis of the hyperalbuminosis. Reitman and Rothschild[12] believe with Hassin that the spinal fluid is primarily absorbed from the perineural spaces. They feel that if these spaces are relatively occluded by edema or inflammatory reaction there may still be an absorption of spinal fluid but not of the larger protein molecules. Boshes[2] considers the protein excess to be "due to the increased permeability of the dilated radicular and spinal meningeal vessels." He also emphasizes that the edematous reaction at the juncture of the anterior and posterior roots causes stagnation of cerebrospinal fluid and that this may play a part in the accumulation of proteins. Haymaker[9] cites several authors who have noted that where proteins from lumbar spinal fluid are increased, the cisternal fluid protein may be normal. Furthermore, Boshes found that in the second or third aspirate tubes the protein was not as plentiful as in the first. This suggests that the hyperalbuminosis is a local phenomenon. It may also explain why in some classical cases of the disease the spinal fluid protein was normal. The author has observed that the protein may continue to increase long after the acute process of the disease has subsided and even while the patient is recovering. This and the other findings point to the importance of stagnation as a cause of the increase in spinal fluid protein.

CASE MATERIAL

The cases to be reported were observed in the Oakland Veterans Administration Hospital between 1949 and 1958. They include all the recognized cases of Guillain-Barré syndrome and were in various stages at time of admission. Most of the patients were studied and treated on the Neurology Service. The author had the opportunity of personally studying the latter five cases in this series.

SALIENT FEATURES OF THE DISEASE

A recognized prodromal disease occurred in 15 of the 26 cases (58 per cent). The preinfection was considered bacterial in nine cases and viral in six cases. The interval of latency from preinfection to paralytic stage varied from 0 to 8 weeks.

The most frequent symptoms at the onset of the paralytic disease were paresthesias and motor weakness. Nine patients, however, complained of pain, especially in the lower extremities.

Extensive motor paralysis is the rule rather than the exception in this disease. All four extremities were involved by motor weakness or paralysis in 19 cases, and atrophy occurred in eight, most often in the small muscles of the hands.

Although this disease is a form of polyneuritis, sensory response was normal in 10 cases. An unusual finding was a transverse myelitis in three patients which gradually cleared as they improved. This indicates that the intramedullary portion of the cord may on occasion be severely but temporarily involved.

The cranial nerves were affected in 10 cases (38 per cent), the ninth and tenth nerves in seven cases, the seventh nerves in six cases and the third nerves in two cases. Singh and Jolly[16] likewise found that the ninth and tenth nerves were the most commonly involved and that only 24 per cent of their patients had seventh-nerve palsy, although many earlier reports emphasized the high proportion of cases with seventh-nerve involvement.[3,18] It is true that since the paralysis may be subtle and bilateral, it is easily missed. Nonetheless overt seventh-nerve palsy probably occurs in fewer than a third of all cases. Guillain pointed out that "there are cases of polyneuritis associated with facial diplegia which do not belong to the syndrome and in which the etiology is different."[7]

The funduscopic observation of papilledema in relation to this disease complex is rare (it was an equivocal finding in one case in the present series). Gilpin et al.[6] reported two cases in 1936; in the patient who had a cerebrospinal fluid examination no elevation of pressure was found. Drew and Magee[4] reviewed nine cases in the literature and reported one of their own, concluding that the causes of papilledema were still obscure; in four of their cases spinal fluid pressure was within normal limits. In a recent study, Feldman[5] considered increased pressure of the cerebrospinal fluid to be the probable primary etiological factor in papilledema. Yet it is noteworthy that Haymaker reported that the abnormality of the cranial nerves is similar to that found in the spinal peripheral nervous system; that is, edema and cellular reaction. Furthermore, cerebrospinal fluid pressure as measured on lumbar puncture is usually within normal limits regardless of the stage of the disease. These observations support the position that the papilledema is actually a true optic neuritis.

Cerebrospinal fluid was examined in all the cases reported here. Cells numbered 0 to 30; in only nine of 58 examinations did the count exceed 10, and in only two was it over 20. The counts were distributed evenly throughout the course of the disease.

Cell type was recorded in only two of the six examinations in the first week of disease, and in both cases the cells were lymphocytes; this type predominated quite definitely in later examinations, a finding in accord with that of Roseman and Aring.[13] Cultures and virus studies at the state laboratory, done in some cases, were fruitless; other investigators have reported similar negative results.[9,16]

TABLE 1.—*Cells and Protein in Cerebrospinal Fluid at Different Time Intervals of the Disease (In Series Here Reported)*

	Days from Onset of Paralytic Stage				
	0-6	7-15	16-30	30-60	>60
No. of determinations ..	6	5	11	11	19
Prevalent cell type........	Lymph	Lymph	Lymph	Lymph	Lymph
Mean number of cells...	4.5	8	3	4	5.5
Protein (mg. per 100 cc.)	72	116	142	122	101

Cerebrospinal fluid protein content was 22 to 430 mg. per 100 cc.; often it was normal or only slightly increased in the first week of the disease, rose to a plateau between the third and fifth weeks and then slowly declined, though it may remain abnormally high for years, as it did in one case in the series, and may increase on acute exacerbations of the disease as it did in another case. In only one case among those reported here was the protein content not abnormally increased. In this case no spinal fluid specimens were taken between the second and the seventieth day of the disease. Failure to examine the spinal fluid during the height of the disease probably accounts for the failure to detect abnormal increases in otherwise typical cases that have been reported. Recent investigators have emphasized that more frequent testing virtually always discloses the increase,[13,18] as the findings in the present series corroborate (Table 1). In most cases the increase corresponded to a high colloidal gold curve; in seven there was a mid-zone curve and in five a first-zone curve (with syphilis serologically detected in three of these). Apparently the colloidal gold curve may lag somewhat behind the protein rise.

Albuminuria was detected, as by other investigators,[13] in the acute phase of the disease, as would be expected in patients with muscular wasting and negative nitrogen balance. Total serum protein and its fractions may be little affected early in the disease, but the total protein may decline later because of chronic tissue wasting. Gastric analysis and glucose tolerance tests disclosed little abnormality.

Electrocardiographic changes, primarily T-wave flattening, were detected in three patients, one of whom was found to have myocarditis. Few patients were so tested, although myocardial changes have been recognized, clinically and pathologically, as a complication of Guillain-Barré disease.[12]

Electromyographic studies were made in four cases, in all four disclosing evidence of abnormality in the lower motor neurons. Marinacci[11] states that since the disease must destroy 30 per cent of the lower motor neurons before it becomes clinically apparent, electromyography may be helpful in early diagnosis.

Electroencephalograms were made on four patients. Findings in one were normal, in another borderline, in the other two characteristic of diffuse slow activity.

Guillain-Barré disease may take one of several courses: Progressive rapid paralysis terminating fatally; rapid fulminant onset and gradual recovery; slow onset and slow recovery; remission and recurrence, which seems related to reinfection rather than to an idiopathic process like that of multiple sclerosis. It may be that the nervous system in the recovery phase is hypersensitive to toxic factors and minor insults that normally could be sustained without neural impairment. Most patients can withstand both viral and bacterial infections without exacerbation of the neural disease. The four courses outlined above cover most cases, the most frequent course being one of slow or rapid onset followed by gradual recovery.

In the series here reported, recovery was complete as early as 10 weeks and as late as 100 weeks after onset (average 37 weeks). The length of observation of the patients who did not recover completely varied from 8 to 98 weeks (average 32 weeks). Ambulation—a definite stage of improvement—was achieved in 5 to 57 weeks (average 29 weeks). The effect of steroids in recovery will be discussed under the subject of treatment.

One patient died of metastatic carcinoma of the esophagus confirmed by biopsy; no necropsy was performed. In the other three cases in which the patient died, complete necropsy was carried out and the diagnosis of Guillain-Barré disease was confirmed. All three died of pulmonary complications —bronchopneumonia in two cases and atelectasis in one.

Two cases previously referred to illustrate the unpredictable effect of intercurrent infection in Guillain-Barré disease. In one of them, while the patient was hospitalized there were two severe outbreaks of carbuncles with pronounced systemic reaction and in one instance with pleural effusion, but there was no exacerbation of neural disease. In the other, however, cellulitis of the right leg was accompanied by facial diplegia, dyspnea and progression of paralysis. Triamcinolone produced a prompt and favorable response and was discontinued after a month. Then a mild upper respiratory infection supervened and caused another exacerbation of the neural disease which promptly subsided when triamcinolone was again administered.

In summary, the Guillain-Barré disease complex usually follows an initiating infection by a period of a few days to weeks. It may occur at any age and there is no seasonal predominance. The paralytic stage usually begins with paresthesia or pain followed by hypotonic paralysis without involvement of the pyramidal tract. Constitutional and sphincter disturbances are rare. Cranial nerve involvement, evident in about a third of the cases, indicates a bad prognosis; a worse sign is dyspnea, present in about one-fifth. Laboratory findings are usually not significant except for the characteristic increase in spinal fluid protein while the number of cells in the fluid remains within normal limits. Electromyographic findings reflect the spinal-root process of the disease while the electroencephalogram may indicate the degree of cerebral involvement. Death is usually due to pulmonary complications.

Guillain has been much criticized for his insistence on albuminocytic dissociation as a necessary diagnostic feature, but in the present series this condition was invariably present in the spinal fluid. If it is not found on several appropriately timed examinations before suppressive drug therapy is begun, the diagnosis should be seriously questioned. On the other hand, the dissociation is only a supportive finding, since it is present in many other diseases.

TREATMENT

Among the many modes of therapy for Guillain-Barré which have not proven effective, two are perhaps current enough to be mentioned. Multiple vitamins have been used for years without any known effect on the paralytic process. Dimercaprol (BAL) has been tried because it restores the enzyme metabolic balance of neurons in such conditions as arsenical intoxication; as late as 1953 von Hagen and Baker[18] suggested that administration of thiamine, crude liver extract and dimercaprol was the treatment of choice. Most of the recent studies do not support the value of dimercaprol.[16]

Antibiotics have of course been used against the primary disease, as also specific remedies (as in diphtheria) when available.

The corticotropins and corticoids were at first proposed nearly concurrently by Seltzer[15] and Stillman.[17] Seltzer and co-workers reported a case of progressive disease with cranial nerve involvement in which dramatic response followed administration of corticotropin and the patient fully recovered in four weeks. Stillman and Ganong studied a similar case with most significant features: On administration of 40 to 80 units of corticotropin daily the eosinophil count decreased rapidly and cerebrospinal fluid protein was reduced in nine days from 132 to 82 mg. per 100 cc. There was concomitant clinical improvement. At this point, though, there was another progression of symptoms with corresponding increase in eosinophils and spinal fluid protein. On the theory that the adrenal cortex had become refractory to corticotropin, cortisone was administered intramuscularly at 300 mg. per day. Again there was improvement in clinical and laboratory findings, and the cortisone dosage was gradually reduced to discontinuance four weeks later. Seven months after onset of paralysis the patient had made a nearly complete recovery.

Since its inception many successes have been reported for cortisone therapy. Jackson,[10] reviewing 68 reported cases treated with cortisone, found that early response was often dramatic and that 21 patients were completely well within a month, while only two died. Berlacher and Abington[1] reviewed 24 cases treated with cortisone or corticotropin or both: Of the 16 patients treated while the disease was progressive, 11 had improvement in 48 hours, two others within six days; four relapsed. Of the six treated after the disease had reached a plateau, four were improved in four days. There was no improvement in the three treated during convalescence. Although the reviewers observed no real difference between cortisone and corticotropin therapy in the outcome, relapses during or after discontinuance of corticotropin therapy were common; they accordingly recommended administering 300 to 500 mg. of cortisone daily for two to four days and 100 mg. daily for maintenance thereafter for four to six weeks.

TABLE 2.—*Comparison of the Degree of Recovery in Those Treated with Steroids and Those Untreated*

	Died	No. Recovery	Incomplete Recovery	Complete Recovery
Untreated (20 cases)	20%	15%	50%	15%
Treated with ACTH or Cortisone (6 cases)	0	0	33%	67%

In the series here reported, nearly all patients received multiple vitamins and physical therapy. Four received dimercaprol in therapeutic dosage and in only one case was there (questionable) improvement.

Results with steroid therapy are summarized in Tables 2 and 3. The cases mentioned in Table 3 deserve some comment: Good to excellent results were obtained in four of the five cases in which the disease was progressing. In Case 24 the disease was stationary and no improvement was noted. In Case 23 a four-day course of steroid therapy before admission was said to have been without effect and therefore it was not continued. Despite prolonged triamcinolone administration in Cases 24 and 26, studies of blood and electrolytes as well as of bone structure disclosed no physiologic disturbance.

Steroid therapy is in accord with the concept that Guillain-Barré disease results from swelling of the nerve fibers in the spinal roots during the first five days of the acute paralytic disease or of any exacerbation. Whether this edema be of allergic or infectious origin, the steroids should reduce it. The course of the disease thereafter may be largely the result of injury caused by edema—reactive degeneration. Secondary degeneration begins as early as the sixth day after onset[9] and is accompanied by a cellular response. Peripheral nerve studies have been so few in this disease that the limits of the process are not clearly defined, but there are suggestions that the entire nerve is involved.[19] During this reaction the edema is presumably subsiding, and the disease process has reached its maximal stage. Since the nerve damage is due to the degenerative process and the cellular response, it is not logical to expect dramatic effects from corticosteroids at this stage although they may hasten subsidence of edema and thus save a few nerve fibers from further damage.

TABLE 3.—*Results in Those Cases Treated With Corticosteroids*

Case No.	Treatment	Stage of Disease	Results
13	ACTH 30 units intramuscularly every 8 hours for 4 days	Early, progressing	Good results, no progression in disease and decrease in sensory level. Incomplete recovery
17 (second admission)	Cortisone 100 mg. b.i.d. for 8 days, then Cortisone 25 mg. q.i.d. times 2 weeks	Slowly progressive in exacerbation	Good results initially; eventual total recovery
21	Cortisone, 100 mg. b.i.d continued for three months	Slowly progressive	Good results; complete recovery
23	Prednisolone 10 mg. t.i.d. for four days	Early, progressing	No immediate improvement but eventual total recovery
24	Triamcinolone 6 mg. q8h for 1 month	Maximal disease	No change; incomplete recovery
26	Triamcinolone 6 mg. q8h, two treatment periods, the last continued for 3 months	Progressive	Excellent results; complete recovery

Once edema has completely subsided there is no rational value for the steroids in the regenerative phase; however, there is suggestive evidence that small doses may counteract exacerbations. In Case 26 there was exacerbation on withdrawal of cortisone after successful use in the acute phase, even though the patient was still receiving an antihistamine (diphenhydramine hydrochloride); cortisone therapy was resumed and remission was complete during the subsequent three months of maintenance therapy. In Cases 21, 24 and 26 (Table 3) there were no relapses during long periods of cortisone therapy. Since cortisone does not always bring about remission, it is important to prevent relapse.[10]

In most cases, then, cortisone is the drug of choice. In acute fulminating paralysis when medullary involvement is preeminent, corticotropin (ACTH) should be given intravenously; cortisone may be substituted by the third day if there is good clinical response. The newer steroids—prednisone, prednisolone and triamcinolone—are preferable because they do have fewer untoward side effects. In cases with acute downhill course despite cortisone therapy, a trial of ACTH may be warranted.

Although drug therapy has been stressed in this presentation, physical therapy and other measures are equally important. Following is a brief outline of the treatment at Oakland Veterans Administration Hospital:

A. Immediate measures in the acute phase
  1. Diagnosis by
    a. Neurological examination
    b. Cerebrospinal fluid examination
    c. Indicated laboratory procedures.
  2. Assessment of vital capacity and respiratory function (apply a respirator if any question of respiratory embarrassment exists).
  3. Absolute bedrest.
  4. Positioning in bed with assistive devices, orthopedic mattress with alternating pressure pad, or frequent turnings, and early use of splints and/or bedboard.
  5. Gentle passive exercise of involved muscle groups through a full range of motion twice a day.
  6. Steroid therapy if a question of progressive disease exists.
  7. High caloric, high protein diet.
  8. Salicylates and/or codeine substitutes for pain (barbiturates and narcotics are not necessary).
  9. Prompt treatment of all complications, the most frequent:
    a. Respiratory infections
    b. Myocarditis
    c. Urinary tract infections
    d. Fecal impactions.

B. Steps after acute process:
  1. Manual muscle test and measurements.
  2. Galvanic stimulation to muscles considered moderately weak.
  3. Daily Hubbard tank bath with assistive underwater exercises.
  4. Blow bottles to improve vital capacity if indicated.
  5. Except for above measures, continued bedrest for a total of two months.

C. Rehabilitation after two months:
  1. Physical therapy ambulatory classes; splinting for weak muscle groups.
  2. Continued electrical stimulation to weak muscles.
  3. Supervised exercise in swimming pool.
  4. Self-care evaluation and occupational therapy.

Bedrest in the first two months is intended to allow the earliest maximal regeneration of neural tissue. It is felt that if damaged axons or nerve cells are stimulated, their recovery phase is lengthened. It should be kept in mind that there may be mild cases with rapid recovery which will not require a full two months of bedrest.

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A Simple Way to Drain a Subungual Hematoma

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THE RELIEVING OF PRESSURE in a subungual hematoma nearly always evokes expressions of gratitude from the patient. While the method described below probably is used by many physicians, it seems worthwhile reporting for those who are not acquainted with it.

The instruments needed are a paper clip with one prong bent outward at a 90 degree angle, a Kelly forcep and an alcohol lamp. After the nail plate has been prepared with alcohol or other suitable antiseptic, the paper clip is grasped with a Kelly forcep and the extended prong is heated in the flame of the spirit lamp until it becomes red. With the patient's finger held steady to prevent jerking of the hand during treatment, the heated tip is pressed lightly against the nail plate over the hematoma. Usually it penetrates the nail quite easily and the hematoma drains, with decided relief of pain, as soon as it is withdrawn. Since the heat is readily dissipated as the tip of the clip burns through the nail plate and enters the encapsulated blood, there is little danger of causing a thermal burn of the nail bed.

This method is less painful than drilling of the nail plate, the procedure takes only a few seconds as against five to ten minutes for drilling, and the temperature of the probe provides comparative sterility.

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Submitted June 27, 1960.

Rabies

Suggested Indications for Treatment of Persons After Exposure to Infection

THE OUTLINE below was prepared by the California State Department of Public Health and the California Conference of Local Health Officers for use as a general guide in an effort to provide a reference source which will be helpful in answering the many detailed and complex questions which arise regarding management of patients who may have been exposed to rabies.

Early and adequate local treatment of a bite wound is of primary importance and may modify judgment as to systemic treatment. Adequate field investigation and facts and circumstances associated with the bite may also affect the treatment indicated.

The reference symbols 1 through 8b in the outline refer to the supplemental notes printed following the outline.

	Health Status of Biting Animal		Suggested Systemic Treatment[8]* (In addition to Local Treatment[3])
Nature of Exposure	At Time of Exposure	During Observation Period	
I. No lesion; indirect contact only.	Rabid	——	None
II. Licks of:			
(1) Unabraded skin	Rabid	——	None
(2) Abraded skin,[5] scratches[5] and unabraded or abraded mucosa.	(a) Healthy	Healthy	None[4]
	(b) Healthy	Clinical signs of rabies[2] or proven rabid (laboratory[6])	Start vaccine at first signs of rabies[2] in animal.[4]
	(c) Signs suggestive of rabies[2]	Healthy	Start vaccine immediately; stop treatment if animal is normal[2] on 5th day after exposure.
	(d) Rabid, escaped,[7] killed,[7] or unknown	——	Start vaccine immediately.
III. Bites:			
(1) Mild exposure (other than multiple bites or face, head or neck bites).	(a) Healthy	Healthy	None
	(b) Healthy	Clinical signs of rabies[2] or proven rabid (laboratory[6])	Start vaccine at first signs of rabies[2] in animal.[4]
	(c) Signs suggestive of rabies[2]	Healthy	Start vaccine immediately; stop treatment if animal is normal[2] on 5th day after exposure.
	(d) Rabid, escaped,[7] killed,[7] or unknown.	——	Start vaccine immediately.
(2) Severe exposure (multiple bites or face, head or neck bites).	(a) Healthy	Healthy	Serum immediately[8b]; no vaccine as long as animal remains normal.[4]
	(b) Healthy	Clinical signs of rabies[2] or proven rabid (laboratory[6])	Serum immediately[8b]; start vaccine at first sign of rabies.[2]
	(c) Signs suggestive of rabies[2]	Healthy	Serum immediately,[8b] followed by vaccine. Vaccine may be stopped if animal is normal[2] on 5th day after exposure.
	(d) Rabid, escaped,[7] killed,[7] or unknown.	——	Serum immediately,[8b] followed by vaccine.
	(e) Wild (skunk, bobcat, fox, bat, etc.)[7]	——	Serum immediately,[8b] followed by vaccine.

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*The reference symbols in this outline refer to the numbered paragraphs in the Supplemental Notes on the following pages.

SUPPLEMENTAL NOTES TO SUGGESTED INDICATIONS FOR POSTEXPOSURE ANTIRABIC TREATMENT

1. Origin of Recommendations

The accompanying suggested indications for postexposure treatment of persons exposed to rabies are based in part upon recommendations of the World Health Organization Expert Committee on Rabies. Third Report (Wld. Hlth. Org. Techn. Rep. Ser. 121, 1957). Some difference of opinion concerning detailed aspects of the treatment of persons who may have been exposed to rabies exists among recognized authorities. Also, the attending physician must exercise judgment, which will logically result in variation in therapeutic procedures for individual patients based on the circumstances under which exposure occurs and the clinical condition of the patient. These variable factors with reference to authoritative knowledge and to the circumstances surrounding the particular occurrence can be expected to influence the pattern of therapy used in specific situations.

2. Utilization of Veterinary Clinical Judgment

a. *Clinical signs of rabies or signs suggestive of rabies* in judgment of a veterinarian.

b. *Healthy* or *normal* in judgment of a veterinarian (see Paragraph 2, Subdivision b, Section 2606 of Title 17, California Administrative Code re isolation of biting animals).

c. *Rabid* in judgment of a veterinarian.

It should be emphasized that under California law, only a veterinarian is legally qualified to express clinical judgment regarding a biting animal. This is of particular import when decision re human antirabic treatment is to be based upon such clinical judgment.

3. Local Antirabic Treatment of Wounds

The early and adequate local treatment of a wound is of primary importance and may modify the indications for further treatment.

a. *Cleansing with Soap or Detergent Solution*—It appears that any bland procedure, such as washing with copious amounts of soap and water, results in lessening the quantities of rabies virus that may be present in a bite wound.

b. *Local Infiltration of Antiserum*—It appears that there is now sufficient experimental evidence to show that the infiltration of antiserum into the tissue beneath the wound, when this is feasible, is effective in the prevention of rabies. The WHO Expert Committee on Rabies, Third Report (1957), "considers this local use of antirabies serum very useful, regardless of the systemic treatment after exposure."

The dose of antiserum used in local infiltration will be dictated chiefly by the site of the bite. However, where possible, not less than 5 milliliters is recommended. *Sensitivity to serum should be tested before serum is used.* (See Note 8b below, re systemic use of antiserum, serum reactions and sensitivity testing.)

c. *Use of Nitric Acid*—The specific value of nitric acid applied locally to bite wounds up to four hours after infection is clear. However, the disadvantages of the pain, scarring and delayed healing of wounds have to be weighed in each situation against the efficacy of the procedure. Nitric acid, available universally, would appear to be particularly useful in deep puncture wounds where washing or irrigation would not be expected to reach the depths of the wounds. When used it should be neutralized after five minutes by soda bicarbonate.

d. *Suturing of Wounds*—It is recommended not to suture bite wounds immediately due to evidence that the closure of a wound is a contributing factor to the development of rabies infection.

e. *Antiseptic and Antibiotics*—The application of ordinary antiseptics and the local use of antibiotics, while they have no prophylactic value against rabies, may follow local treatment to combat bacterial infections.

f. *Tetanus Toxoid or Antitoxin*—May be given as may be deemed indicated.

4. Alternative Schedule of Treatment

It is fully recognized that in certain situations specific conditions may warrant modifications of the accompanying suggested indications for treatment, e.g., exposure, especially in young children or where a reliable history cannot be obtained, and particularly in areas where rabies is enzootic, even though the health status of the biting animal at the time of exposure is considered to be healthy.

One possible modification in treatment is that, following adequate local treatment of the wound, as noted above under Note 3 above, two or three doses of vaccine (one dose daily) be given and no further doses as long as the animal remains healthy. If the animal remains healthy under veterinary observation for five days following exposure, no further treatment need be considered (see Paragraph 2, Subdivision b, Section 2606 of Title 17, California Administrative Code re isolation of biting animal).

5. Abraded Skin or Scratches

a. *Licks of abraded skin or scratches* without eschar or less than 24 hours old at time of exposure should be considered as requiring antirabic treatment.

Licks of abraded skin or scratches with eschar or more than 24 hours old at time of exposure may be considered as intact skin and not requiring antirabic treatment.

b. *Abrasions of skin or scratches inflicted by the claws of a suspected rabid animal* should be considered as constituting a possible exposure to rabies. At time such injuries may be quite severe. The possibility of exposure to rabies arises from the standpoint that if the animal were rabid and virus was present in the saliva, the virus could be present on the claws of the animal via licking of the paws in the immediate past, i.e., just prior to the infliction of the abrasion or scratch wound. Hence, decision re antirabic treatment of persons incurring injuries inflicted by claws of an animal should be guided by the same considerations as for animal bites, i.e., the degree and location of the wounds and the health status of the animal at the time of inflicting the injury and during the usual period of observation thereafter.

6. Laboratory Diagnosis of Rabies

The most immediate examination done for rabies is the *microscopic examination* of brain tissue of the suspect animal for the presence of Negri bodies. The presence of Negri bodies is pathognomonic of rabies infection. The absence of Negri bodies, however, does not rule out the presence of the infection (see Note 6a below).

The *mouse inoculation test* is a second examination. It is routinely performed on those specimens in which the microscopic examination for Negri bodies was negative, inconclusive or could not be performed satisfactorily due to the unsuitable condition of the brain material. The incubation period in inoculated mice developing rabies may range from five to 23 days. The average incubation period in positive tests in the California State Department of Public Health laboratories is about 12 to 14 days. Inoculated mice are held and observed for 30 days before a negative report is rendered.

In instances where typical Negri bodies cannot be demonstrated in inoculated mice which are dying, *serum neutralization tests* may be done to establish or rule out the presence of rabies virus as the pathogenic agent killing inoculated mice.

a. *Relative Significance of the Microscopic Examination for Rabies With Regard to Antirabic Treatment Decision*—While the presence of Negri bodies is pathognomonic of rabies infection, their absence does not rule out the presence of the disease. The development of Negri bodies in the brain of an infected animal to a large degree depends on the duration of the clinical illness and such factors as strain variations in "street" rabies virus and species of animal involved.

In California, considerable data have been accumulated and tabulated on rabies examinations performed by the State Department of Public Health during the ten-year period 1950-1959. By and large, the vast majority of the total of 11,571 animals examined for rabies by the State Department of Public Health, have originated from areas affected with wildlife rabies.

The relative significance of the microscopic examination for rabies in animals originating from wildlife rabies affected areas of the state has been low. Only 249, or about 42 per cent of the total of 589 animals confirmed as rabid by mouse inoculation have revealed Negri bodies on microscopic examination.

b. *Species Variation in Frequency of Negri Bodies*—There exists wide variation in the relative frequency of Negri bodies in the various species of animals examined by the California State Department of Public Health during the period 1950-1959, as follows:

Frequency of Negri Bodies in Animals Examined Microscopically for Rabies and Confirmed Rabid by Mouse Inoculation Tests, California State Department of Public Health, 1950-1959

Species	Confirmed by Mouse Inoculation	With Negri Bodies Number	Per Cent*
Total	589	249	42
Skunk	326	183	56
Dog	107	32	30
Fox	54	14	26
Bovine	47	11	23
Cat	12	2	17
Bat	23	5	22
Bobcat	8	1	13
Raccoon	5	1	20
Horse	5	----	----
Goat	1	----	†
Sheep	1	----	†

*Percentages calculated to nearest 1 per cent.

†Percentage not calculated where the number of animals found positive by mouse inoculation total less than five.

7. Relative Risk of Rabies Infection

In weighing the question of antirabic treatment of persons exposed to animals, consideration must be given to the risk of incurring a serious reaction to treatment versus the risk of incurring rabies infection. The risk associated with antirabic treatment is well known and reaction rates have been reported by various authorities. On the other hand, the risk of incurring rabies infection with any particular exposure usually cannot be so well established. However, certain data are available which permit analogies to be drawn, e.g., the relative frequency of positive findings for rabies by species of animal examined. The data following provide a basis of experience upon which conclusions can be drawn relative to the risk of incurring rabies infection from various species of animals in California:

Frequency of Positive Findings for Rabies by Species, Animals Examined by the California State Department of Public Health, 1950-1959

Species	Number Examined	Positive for Rabies	
		Number	Per Cent*
Total†	11,571	1,032	9
Skunk	1,158	662	57
Bovine	216	64	30
Bobcat	44	10	23
Goat	5	1	20
Fox	405	72	18
Badger	6	1	17
Horse	36	5	14
Bat	266	33	12
Sheep	9	1	11
Dog	3,751	164	4
Raccoon	173	5	3
Coyote	58	1	2
Cat	2,336	13	1
Gopher	731	....	....
Squirrel	643	....	....
Rat	539	....	....
Mice	330	....	....
Hamster	199	....	....
Rabbit	156	....	....
Chipmunk	106	....	....
Opossum	85	....	....
Muskrat	69	....	....
Monkey	54	....	....
Weasel	50	....	....
Mole	44	....	....
Guinea Pig	42	....	....
Deer	16	....	....
Chinchilla	8	....	....
Swine	7	....	....
Bear	4	....	....
Mink	4	....	....
Porcupine	3	....	....
Mountain Lion	3	....	....
Other‡	15	....	....

*Percentages calculated to the nearest 1 per cent.

†Does not include 68 brain specimens from animal species not specified by those submitting to the laboratory all of which were negative for rabies.

‡Includes two each ape, ocelot, coatimundi, hawk, and seal, and one each beaver, owl, parakeet, snake and tapir.

a. *Species of Animals Considered Associated with High Risk of Infection*—In California, exposure to such species of animals as the striped skunk, spotted skunk ("civit or phobey cat"), fox, bobcat, bat, dog, coyote, raccoon, cat, weasel and opossum in descending order of risk, should be considered to be associated with a relative high risk of rabies infection until proven otherwise.

b. *Species Considered Associated With Low Risk of Rabies Infection*—Exposure to such species as the gopher, squirrel, rat, rabbit, mice, chipmunk, and mole are considered to carry a low order of risk of rabies infection and seldom should require antirabic treatment of exposed persons.

In evaluating the degree of risk, it should be kept in mind that during any specific time period in a particular area, the relative frequency of rabies infection in animals submitted for rabies examination may range far below or far above the average figures quoted above. Local health officers, however, can furnish specific data on current experience within their areas.

8. Systemic Antirabies Treatment

a. *Relative Value of Various Treatment Regimes:*

(1) Hyperimmune antirabies serum plus vaccine

(2) Vaccine alone

(3) Antirabies serum alone

The general principles on which the accompanying suggested indications are based are that in mild exposures, a course of vaccine following the recommended local treatment is sufficient, whereas following severe exposures, the systemic administration of hyperimmune antirabies serum together with vaccine should be employed.

b. *Systemic Use of Hyperimmune Antirabies Serum*—The experimental use of antiserum in animals indicates that the chief effect of systemically administered antiserum is a definite prolonging of the incubation period. Antiserum alone, however, apparently has limited saving effect. Indications for antirabies serum in conjunction with vaccine are those persons in which the incubation period are likely to be very short.

(1) *No Time Limit on Use*—In the systemic use of antirabies serum, although it is recognized that the earlier the treatment is started the better, there is no time limit as to when serum can and should be given after exposure.

(2) *Timing of Use of Antiserum Combined With Vaccine*—If passive (serum) antibodies are maintained for too long a period by repeated systemic doses of antiserum, or if less than 14 doses (one dose daily) of vaccine are given even after a single dose of antiserum, there is definite interference by the serum with the antigenicity of the vaccine, as measured, by neutralizing antibody response. Experiments have shown that the interference effect is a true phenomenon which can be demonstrated in laboratory animals and that the interference with active antibody response to the vaccine is also paralleled by an interference with the production of immunity to virus challenge. Doses of vaccine given after the tenth day, however, are active in overcoming such interference.

Therefore, it is recommended in the combined use of antiserum and vaccine in severely exposed individuals *that only a single dose of serum be given followed by at least 14 doses of vaccine.*

(3) *Serum Reactions and Sensitivity Testing*—Reactions to hyperimmune rabies antiserum, even though concentrated and purified, occur approximately to the same degree as with other sera of equine origin. An immediate anaphylactic type re-

action should be avoided by the routine use of an intradermal or ophthalmic test for sensitivity.

In the case of a positive sensitivity test, the usual precautions of desensitization should be followed.

The percentage incidence of the delayed type (serum sickness) reactions has been stated by the WHO Expert Committee on Rabies, Third Report (1957) to have varied from zero to twenty. In California, of 16 persons receiving antiserum, eight incurred reactions.

These should be treated according to usual practice. Since corticosteroid and ACTH have possible antibody-depressing activity, however, their use in treatment of allergic reactions in persons exposed to rabies should be avoided if possible.

c. *Vaccine Treatment:*

(1) *Nerve-Tissue Vaccines (Semple and Harris)*—Actively induced neutralizing antibodies from daily inoculations of nerve-tissue vaccine are not detectable in many individuals until between the tenth and fifteenth day. In severely exposed individuals in which the incubation period is likely to be short, hyperimmune antirabies serum should be used (see Note 8b) above. While the efficacy of human antirabic treatment is difficult to document, the saving effect of nerve-tissue vaccines is well attested by their extensive field use throughout the world for many years.

(2) *Duck-Embryo Rabies Vaccine*—The question of the efficiency of killed-virus duck-embryo rabies vaccine in man cannot be answered definitely at this time. Such question can only be answered relatively and in such indirect terms as development of active serum neutralizing and complement-fixation antibody titer in man and ability of the duck-embryo vaccine to protect or immunize laboratory mice (standard mouse potency test) and other animals, such as dogs, against "street" rabies virus as compared to results obtained with nerve-tissue rabies vaccine.

Similar limitations, i.e., inability to say that the development of active serum neutralizing or complement-fixation antibody titer is synonymous with development of immunity and the possibility of differences in ability of a given vaccine to protect man as compared to laboratory animals, also apply to the nerve-tissue rabies vaccines used in man. However, the mass of data accumulated over many years of extensive use of nerve-tissue rabies vaccines in man leaves little doubt that nerve-tissue vaccines are of value, particularly since the innovation of the standard mouse potency tests. In addition, Johnson[7] has shown that phenolized killed-virus nerve-tissue rabies vaccine produces good protection in dogs against challenge with "street" rabies virus.

In the case of duck-embryo vaccine, evaluation has been based chiefly upon determining the ability of the vaccine to produce serum neutralizing antibody in a relatively small number of persons.

Review of the published reports[1-4] on the use of duck-embryo rabies vaccine indicates that:

(a) Serum neutralizing antibody titer development in man and monkeys[2-4] has not been uniform or high as compared to the 100 per cent obtained with nerve-tissue rabies vaccine, e.g., by Fox.[6] Particular attention is called to serologic studies in two monkeys[3] where neutralizing antibody titer is reported at 15 and 20 days after vaccination with duck-embryo vaccine, but dropped to very low levels by 30 days.

(b) No detailed information is available in published reports[1-4] on potency tests in mice as compared with nerve-tissue vaccine.

(c) There are no tests showing protection against challenge with "street" rabies virus in dogs or other animals. It is noted that 43 dogs were given either duck-embryo vaccine or rabbit brain vaccine with 80 per cent in both groups reported to show demonstrable serologic antibody titer after 30 days; however, these dogs were not challenged with "street" rabies virus.[3]

The chief criteria to be used in evaluating duck-embryo rabies vaccine, should be potency test results and tests showing ability of the duck-embryo vaccine to protect dogs and other animals against challenge with "street" rabies virus. Such results should be compared to that obtained with nerve-tissue vaccine and Flury strain low egg passage (LEP) canine rabies vaccine, the latter which has been demonstrated to provide complete protection in dogs to challenge with "street" rabies virus at 39 months after vaccination.[8]

In the absence of such data, the State Department of Public Health feels that the duck-embryo vaccine cannot be recommended as being preferable to the nerve-tissue rabies vaccine, for use in man, at this time.

The impetus for duck-embryo rabies vaccine arises from the risk of neuroparalytic accidents which occur occasionally with use of mammalian brain-tissue vaccines. Inasmuch as the duck-embryo rabies vaccine has been reported to be almost devoid of encephalomyelitis producing qualities as tested with Freund adjuvant in laboratory animals,[5] it is expected that neuroparalytic accidents would be materially reduced, if not eliminated with the use of duck-embryo or Flury strain chick-embryo rabies vaccine.

At the present time, therefore, it remains a question of clinical judgment on the part of the attending physician as to whether to use the nerve-tissue vaccine or the duck-embryo vaccine in a particular patient. The potency of the nerve-tissue vaccine has been demonstrated conclusively and there is still room for doubt as to whether duck-embryo vaccine achieves the same degree of potency. On the other hand, the relatively slight risk of a neuroparalytic accident from the vaccine is less with the duck-embryo vaccine. In some instances, both types of vaccine have been used in a single course of prophylactic therapy, i.e., nerve-tissue vaccine for the first seven injections and duck-embryo vaccine for injections eight through fourteen.

A change to duck-embryo rabies vaccine would appear to have merit in persons showing signs of severe reaction to nerve-tissue vaccine rather than running the risk of severe postvaccinal paralysis in *continuing the latter vaccine.*

(3) *Flury Strain High Egg Passage (HEP) Rabies Vaccine*—Interest in the possible use of HEP Flury strain rabies vaccine in man is twofold, i.e., for safe postexposure emergency immunization and for primary preexposure immunization (sensitizing course) and maintenance (booster inocula) of immunity in particular groups of persons at high risk of exposure, e.g., veterinarians, dog handlers, laboratory personnel, and postal and other deliverymen.

Experimental work to date (1957) indicates that on the basis of uniformity and level of neutralizing antibody response, HEP Flury vaccine does not equal a course of Harris or Semple type nerve-tissue vaccine. However, promising results have been obtained with the use of HEP Flury strain vaccine for inducing and maintaining neutralizing antibody titer on a "before exposure" basis. Use of the product in recipients of previous "Pasteur" treatment, some as long as 20 to 25 years ago, resulted in rapid neutralizing antibody response to single HEP booster inoculum with antibody titers, which often surpass those induced by a full primary course of nerve-tissue vaccine.

While HEP Flury strain vaccine shows promise, the product is not yet available commercially.

(4) *Re-treatment*—Fairly often a situation arises in which a person previously exposed to infection and treated with vaccine is reexposed to rabies. The question as to whether treatment should be reinitiated and, if so, on what basis, then arises.

Recent studies in recipients of "Pasteur" treatment indicates that detectible neutralizing antibody titer commonly persists for at least five years after a single course of vaccine and for 15 or more years after re-treatment. In previous recipients of "Pasteur" treatment, it has been found that a single dose of high egg passage (HEP) Flury strain vaccine resulted in a prompt and significant rise in neutralizing antibody titer which often surpass those induced by a full primary course. (See Note 8c (3) above, re HEP Flury strain vaccine.)

Such work indicates that "Pasteur" treatment conditions the recipient so that at any time within 20-25 years he will respond rapidly to antigenic booster inoculum. The WHO Expert Committee on Rabies, Third Report (1957), states that there is reason to believe that from an immunological standpoint a similar preparation and booster effect may be expected from any potent rabies vaccine. The Committee has modified their 1950 and 1954 recommendations re re-treatment to suggest that on subsequent exposures, a single booster dose be given in the case of mild or moderate exposure, and, in the case of severe exposure, a second booster dose one week later.

(5) *Reactions to Vaccine:*

(a) *Nerve-Tissue Vaccine*—This vaccine is a crude biological product constituting a heavy suspension of "fixed" rabies virus infected rabbit brain in which the virus has been inactivated by various chemical or physical agents, e.g., in Semple type vaccine, phenol is used for inactivation.

All treated patients experience local reaction to administration, usually of moderate severity. However, on occasion, severe and dangerous reactions to vaccine occur, the most important of which involve the central nervous system. Evidence strongly suggests that these latter reactions are an organ specific iso-allergic encephalitic reaction directly related to the multiple injection of the brain tissue contained in the vaccine.

Evidence is that the risk of postvaccinal paralytic reactions tend to increase directly with the number of doses of vaccine administered and occur more frequently in persons receiving a second or more course of vaccine and in those with a history of allergy.

Reports of severe reactions in the United States have varied from as high as one in 600 treatments to as low as one in 7,000.

The degree of involvement of the CNS varies from mild transient weakness to a fatal ascending paralysis of the Landry type. The mortality from these reactions may vary from 10 to 25 per cent, but in those who survive, there are generally few residual sequelae.

If, during the course of treatment, the patient develops constitutional signs or symptoms such as headache, nausea, vomiting, tingling sensations, general lymphadenopathy, or manifestations of general allergy, the course of vaccine should be discontinued. It has been suggested that if continued treatment is deemed necessary, that an avian embryo vaccine be substituted, e.g., duck-embryo rabies vaccine.

(b) *Avian Embryo Vaccine*—Experimental evidence indicates that postvaccinal neuroparalytic accidents do not occur with administration of vaccine prepared from avian embryos (duck-embryo and

Flury strain HEP rabies vaccines). Limited experience in man confirms this observation.

While neuroparalytic type accidents have not been associated with the use of avian embryo rabies vaccines, the avian products are not devoid of reactions:

Duck-Embryo Vaccine—Of 42 case histories of antirabic treatment received by the California State Department of Public Health reporting the use of duck-embryo rabies vaccine, 71 per cent reported local erythema, 55 per cent local pain and induration. Fever and body aches and pains were reported by 14 per cent. Two persons (4.8 per cent) incurred urticaria. Only 9.5 per cent reported no reactions.

Flury Strain (HEP) Vaccine—Of 129 persons receiving three intradermal injections, spaced five days apart, of Flury strain HEP rabies vaccine in California in January, 1956, only 5.4 per cent reported no reactions and 21.7 per cent reported general reactions such as adenopathy, malaise, body aches, or fever.

Persons known to be sensitive to egg protein should not be given avian origin vaccine unless necessary, and then only with proper precautions.

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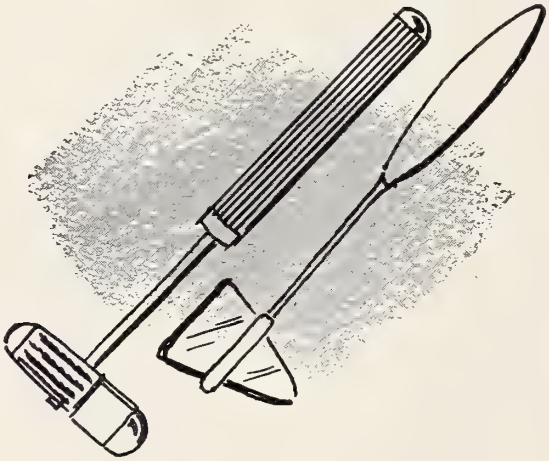

Postpartum Phlebectomy

EDWARD N. SNYDER, JR., *M.D.*, and
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• **Saphenous vein ligation and stripping was performed on 27 patients in the immediate postpartum period without complications. Doing the operation at this time saves time and money. Technically it is easier to do postpartum than during pregnancy, and the patients have less postoperative discomfort than is usual with phlebectomy at other times.**

USUALLY VARICES that develop or enlarge during pregnancy diminish in size after parturition. However, the veins will not return to a normal state if irreversible anatomic changes have taken place. With passage of time varices become larger and more troublesome.[7]

Since patients operated upon for varicose veins spend about the same length of time in hospitals as do postpartum patients, and also about the same time at home in convalescence, it seemed logical to consider carrying out surgical treatment of varicosities in the immediate postpartum period, thus making one stay in hospital serve two purposes.

We performed saphenous ligation and stripping on 27 patients in the immediate postpartum period without postoperative complications. The patients varied from 22 to 39 years of age and had two to six children each; 22 of the patients had three or more children. Fifteen of the 27 patients had a definite familial history of varices. Seven patients had noticed one or more prominent varicose veins while they were in their late teens, before they ever became pregnant. Of the 20 patients who noticed varices only after pregnancy, five did not observe any until the second or third pregnancy. The varices were bilateral in 16 patients, limited to the left leg in eight, and to the right leg in three.

INDICATIONS FOR OPERATION

In general, indications for surgical treatment of varicosities are the same for pregnant patients as for any patient. A special indication is a history of significant or troublesome varices between pregnancies. If the last previous delivery was anything other than normal and uncomplicated, that should be considered a contraindication. We believe the operation should be done at the time of the last planned pregnancy, since pregnancy seems to dispose toward development of new varices. Of three patients in the present series who became pregnant again after operation, two had new varices develop.

All patients are carefully evaluated during pregnancy, and the usual diagnostic tests are performed.[4,5] However, a history and visual examination give most of the necessary information. All the patients in the series had incompetency of both the greater saphenous vein and the perforator veins. In many cases the incompetency of the perforator vein was the more pronounced. In only three patients was incompetency sufficient to warrant operation of the lesser saphenous system.

Time of Operation

As soon as feasible after delivery, we are notified by the obstetrician. The patient is then reevaluated, and if operation is mutually agreeable it is performed on the second postpartum day when possible, but holidays, weekends and surgical schedules sometimes interfere with this. No complications occurred that were attributable to elective operation so soon postpartum.

Technique

The authors cannot improve upon the excellent detailed description of surgical technique for varicose vein operations given by Homans[3] in 1916, and Myers[5] in 1955. However, several points bear stressing. Spinal anesthesia was used in 15 cases, and general anesthesia in 12. Our anesthesiologists are not hesitant about repeating a spinal anesthetic if both they and the patient so desire. After dissection and ligation of veins in the fossa ovalis, an intraluminal stripper is inserted in the greater saphenous vein from ankle to groin and is allowed to remain in place while the dissection and ligation of the tributaries and perforators, which have been carefully marked out before operation, are completed. Much of this dissection is done with the Mayo extraluminal strippers. All incisions are meticulously approximated after it is ascertained that the wounds are dry. The legs are elevated as high as possible and massaged free of venous blood, then the intraluminal stripper is pulled through to the groin.

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From Huntington Memorial and St. Luke Hospitals, Pasadena.

Excess blood is expressed from the extremity, and then the groin incision, which has been partially approximated, is completely closed. If the removed vein is intact, this completes the operation; otherwise a meticulous search must be carried out to insure complete removal of the greater saphenous venous system. A compression bandage consisting of abdominal pads and wide (4 or 5 inches) Ace bandages is then applied from toes to groin.

The operations took from 80 to 108 minutes in the present series of cases. Recently we have shortened the time in cases of bilateral varicosities by operating on both legs simultaneously.

Postoperative Care

The patient's legs are kept elevated at as steep an angle as is comfortable for her. Early ambulation is encouraged but kept at a minimum during the first few postoperative days, since ambulation if done too enthusiastically leads to excessive edema and bleeding. When the patient is ready to leave the hospital, the large pads are removed from the legs, but the Ace bandages are reapplied.

Antibiotics are not used routinely postoperatively. Most of our patients go home on the second or third postoperative day. Those who stay longer do so for their own convenience rather than because of complications.

The total stay in hospital was four to six days in 20 cases and seven to eleven days in seven cases, including labor, delivery, operation and postoperative days. Several of the patients had been put in hospital several days before delivery because of potential obstetrical complications.

RESULTS

The patients have been enthusiastic about combining delivery and operation, not only because of the saving in time and money but also because they seem to have less postoperative discomfort than the average patient after varicose vein operations. Fifteen of the patients had not had sclerosing injections, nine patients had had two or three injections, and three patients had had to have many. The results of operation were good to excellent in 23 patients and fair in two. The other two had significant new varices that developed when they became pregnant again.

DISCUSSION

In recent years some investigators have enthusiastically recommended surgical treatment of varices during pregnancy.[1,7,8] While the relief of symptoms thus obtained by patients incapacitated by varices during pregnancy is gratifying, it seems to us that it is only the rare patient who cannot be managed through this period by nonoperative means. And we agree wholeheartedly with Greenstone[5] and associates, who caution against phlebectomy during pregnancy for any but the exceptional patient. Rather than subject a pregnant woman to operation for varicose veins, we offer the alternative of doing the operation immediately postpartum.

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The Coroner and the Common Law

Part V. Coroner or Medical Examiner?

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PERIODICALLY IN THE PAST contention has arisen regarding the relative virtues of the medical examiner system and the coroner system. Champions of both systems have been employed to make numerous studies and reports in California. There have been both wide variance and close agreement among the several investigators, but basically they all recognize that the real determining factor in gauging the value of a medicolegal office is the quality of work that it does. The terms *coroner's office* and *coroner system* have carried a stigma in many areas in the past because of the incompetence in some of the jurisdictions as well as because of the adverse historical implications. On the other hand, a new name for incompetence does not change the quality of work nor does a name reduce the standards of a well operated office. It might be that a new title for an official engaged in medicolegal work in the State of California would be desirable, but such a change will require legislative action far out of proportion to any immediate benefits which might be derived from such a change. No title will insure the medicolegal investigating officer's competence, capacity or incorruptibility.

In the final analysis, the adequacy of a medicolegal system depends upon the training of its personnel. In the past, where personnel and financial support were available, offices with meager beginnings have acquired staffs of well trained technicians, secretaries, investigators and consultants who have done good work under a well qualified and well compensated administrator.

In considering the extent to which a system should be developed in any specific locality, one must take into consideration the geographic features, distribution of population, local finances, other economic and social factors, potentialities for growth, office and housing space, load figures and the local philosophy of the area.

If one were to evolve a statewide system for medicolegal investigation, some cooperative balance would have to be established between the urban centers with enough funds to staff a competent office and suburban areas that had no money or personnel or laboratory facilities. In fourteen counties of California the duties of coroner and sheriff are combined under the charge of one person. In many counties the duties of coroner and public administrator are combined. There are unique factors that justify the combinations in certain instances, but there are areas in the State of California that now have combinations of this sort although they would be better served by separate offices, with each division staffed by a specialist in the field.

Obviously, it is essential at all times that the medicolegal officer of the county work closely with the law enforcement officers and with the district attorney's office, but where the volume of work to be done warrants the expense, separate and individually integrated offices offer the best potential services. Where volume and funds permit, the medicolegal office seems to be best served by a physician, in spite of the judicial and legal requirements of the office. It seems more practical for a physician to acquire the necessary legal knowledge to conduct the legal routines of the coroner than for an advocate or jurist to acquire the medical knowledge essential for medicolegal investigation. The background of experience needed for the best direction of a medicolegal office staff is also overwhelmingly weighted on the medical side.

Some supporters of the coroner-sheriff combination have suggested that the same law enforcement agency should be concerned and charged with not only the responsibility of an initial investigation into the cause of death but also with the detection, apprehension and detention of suspected persons. Others maintain that the coroner or medicolegal officer of the county should only determine the cause of death and should have no further investigative responsibility. Such limitation is, of course, archaic and is not currently acceptable because of the now heavy and still expanding responsibilities of the modern medicolegal investigating system. A middle course between these two extremes offers the most promise.

The Pathologist

No one likes death, not even the people who choose it voluntarily. People commit suicide only because they like death better than the life they have. Death is also generally messy; and dead people, whether embalmed or not, soon become physi-

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Part V of an article appearing in five parts. Parts I, II, III and IV appeared in the May, June, July and August issues.

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cally repulsive. Yet the pathologist, when he is engaged in medicolegal investigation, must examine dead bodies by the necropsy technique; and unattractive and unpleasant though the procedure may be, there is no discipline in which accuracy is more essential or honesty, knowledge and experience at a higher value. The benefits of the necropsy and medicolegal studies are great and accrue not only to science but to society as well. The academic contributions derived from an autopsy study are inherited by posterity, for the final focus of such scientific investigations is on the welfare and future of mankind. Observations at autopsy are constantly being translated into new safety and health programs that become a part of man's progress in the art of living, contributing to his future comfort, security and happiness. Knowledge that this is so helps the medicolegal investigator to overcome some of the repulsive aspects of his work.

Coroners of the 19th and early 20th centuries had little stimulation to make contributions of this order. Neither the statutes of the time nor the attitude of society were such as to whet a scientific interest in the work or to encourage academic research in this field. Coroners were in fact prohibited from such activities by law. It is understandable in the circumstances that the office of coroner deteriorated almost to nullity. Pure scientists, be they social scientists or medical scientists, are unique and peculiar in their attitude. Intellectual curiosity and academic interest coupled with a social conscience establish a part of the formula for their motivation. To function happily and effectively, however, investigators must have legal authority, source material, financial support and a place to work. All these facilities have, at various times, been denied the medicolegal scholar.

With singular exceptions this situation still prevails, but progress is being made. While many of the reports of investigations of our medicolegal system have been unduly critical or prejudiced, they have without exception embraced the principle of improvement of the existing system or a change of the existing system to one with more promise. Better laws, better personnel and better financial support have been routinely mentioned by all. On the other hand, legislators and officials have frequently been indolent and disinterested when confronted with their constituents' medicolegal necessities. Educational institutions, with rare exceptions, have neither established departments of legal medicine nor offered planned courses to matriculate students in the field. Financial support from public sources continues to be meager; bequests are virtually unknown because no individual, or single segment of society, can derive much personal profit from either the support of a single research project or a comprehensive group program. Yet medicolegal investigation, especially where there is uniformity and competence, profits everyone. The financial responsibility assumed by the medicolegal investigator and the emoluments which hinge upon his findings have become matters of imposing magnitude. Many millions of dollars' worth of insurance policies, indemnities and industrial awards are distributed on the basis of medicolegal studies, but the value of medicolegal findings in criminal cases where either the public safety or the personal freedom of individuals is involved may be even greater. Today, even the best medicolegal consultation available is not good enough to provide all the accurate, impartial scientific work the public needs. Time, money, public cooperation and research must be regularly contributed and wisely used in order to assure each citizen his rights, privileges and safeguards.

RECOMMENDATIONS

In condensing the conclusions, opinions, and recommendations of the committees who have studied the medicolegal problem, the following recommendations predominate:

1. That properly accredited medical societies and legal societies be requested by the State Legislature to establish standards of qualification for personnel engaged in medicolegal investigation. These recommendations should include not only qualifications, but salary scales.
2. That these same agencies be requested by separate or by joint effort of their memberships to establish the responsibility of medicolegal officers within the context of current statutes, and, if necessary, to recommend legislation revising the scope and status of responsible medicolegal officers.
3. That medical schools and major educational centers be requested to intensify and augment training programs in legal medicine for medical students and for postgraduate students as well, and that continuing education for practicing physicians be provided to further acquaint them in newer methods and enlarged scope of forensic pathology. It is believed that an adequate panel of experts may be developed by such procedures for service in respective areas of medical practice.
4. That colleges and medical schools, upon their students' completion of a given curriculum, make available a list of students who are available for employment in medicolegal offices throughout the state.
5. That the utilization of qualified personnel be encouraged by postgraduate university extension and other miscellaneous courses offered to in-

cumbent sheriffs, coroners, public administrators, and other interested groups within the State of California to provide refresher courses and to introduce new techniques.

6. That provision be made temporarily for adequately trained personnel to be available for consultation in rural areas where facilities currently do not exist and where minimum budgets preclude the full or part time employment of specialists in the respective fields.
7. That the local option of rural communities be maintained and that the principle of county or home rule continue to be recognized. Within such areas, however, it is suggested that a well balanced and comprehensive campaign of public education be instituted for the dissemination of information regarding the legal background, the social necessities and the proper functions of an office of medicolegal investigation.

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A New Circumcision Instrument

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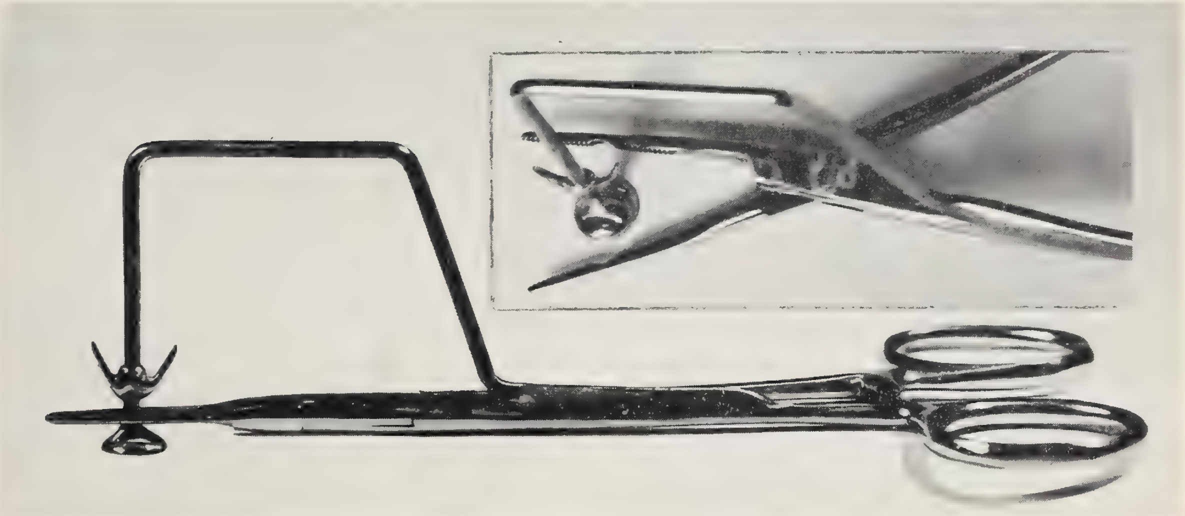

THE INSTRUMENT pictured* is designed to make circumcision easier and quicker. The bell shaped dome (which has openings in it to permit the escape of urine) fits over the tip of the glans penis, and the two prongs are used to hold the foreskin forward under tension. Since the blades of the hemostat are notched to fit around the rod on which the bell dome and the prongs are mounted (see inset), they can be clamped together tightly enough to effect hemostasis in the prepuce at the operative site.

In the use of this instrument, the first step is to free any adhesions of the prepuce to the glans, spread the prepuce with forceps, retract it behind the corona, then return it to its original position covering the glans. This done, the hemostatic blades of the clamp are spread wide, the bell dome is placed on the tip of the glans, and the prepuce is drawn upward with forceps and hooked on the two prongs to hold it in place. If the penis is small, the prepuce need not be drawn taut; but if of average size or larger, more tension must be used in order that after the operation there will be enough retraction to draw the remaining skin back beyond the corona.

With the prepuce held forward on the prongs at the right degree of tension, the hemostat is clamped and the prepuce is cut off with scissors and scalpel flush with the jaw of the hemostat. As soon as clotting occurs, the clamp is opened and the bell dome is gently removed from the glans. If a dressing is needed, gauze impregnated with petroleum jelly is suitable.

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Submitted February 24, 1960.

*Made to author's specifications. Not generally available.

CASE REPORTS

Cardiac Arrest Occurring Outside the Operating Room

Report of Two Cases

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WITHIN THE LAST THREE YEARS the literature has been sprinkled with accounts of cases in which cardiac arrest occurred in a hospital but outside the operating room and resuscitation brought about total recovery of the patient[1,2]; but it may be assumed that many unsuccessful attempts have been made. Following are reports of two cases in which this extraordinary procedure was carried out, according to a previously devised plan, at Riverside Community Hospital after arrest had occurred in the emergency room, with the patients completely recovering. In both patients thoracotomy was done and defibrillation, cardiac massage and artificial respiration were carried out. A clinical diagnosis of myocardial infarction was made in each case.

CASE 1. The patient was a 49-year-old Caucasian man who was admitted to the emergency room at 9:25 a.m. on March 17, 1959. About one week and again two days before admission he had had substernal pain for about a half hour. At 8:00 a.m. on the day of admission he had sharp substernal pain radiating to the left elbow. A friend brought him to the emergency room. His blood pressure then was 80/0 mm. of mercury. At 9:35 a.m. while an internist was listening to his heart, arrest occurred. He became unconscious immediately, and blood pressure and pulse were unobtainable. Vigorous pounding on the chest and intracardiac injection of epinephrine (1 cc. 1:1000) did not restore the heartbeat, although respirations continued for two minutes. The emergency alarm was sounded and a surgeon and anesthesiologist arrived on the scene. Within four minutes after arrest was suspected, thoracotomy was done, a tube was placed in the trachea and the anesthesiologist was forcing respirations. The heart was dilated and in asystole. Cardiac massage was begun at a rate of about 60 per minute and after about ten minutes the heart began to fibrillate. Twice it was necessary to shock the heart electrically. First a series of three shocks was given, then, after five minutes, another similar series. About two minutes after the second series, spontaneous cardiac contractions returned at a rate of about 60 per minute. Respirations resumed spontaneously soon after the heartbeat returned, about 20 minutes from the onset of cardiac arrest. After some ten minutes of observation of the regularly beating heart, the lungs were fully expanded and the chest wall was closed.

During the massage it was necessary to restrain the patient and as soon at it seemed safe (at 10:30 a.m.), 15.0 mg. of morphine sulphate was given intravenously. Vasoxyl® (methoxamine in aqueous solution) was given to support the blood pressure, and procaine amide hydrochloride (100 mg.) was also given intravenously. At 11:15 a.m. when the patient was taken to the recovery room, the systolic blood pressure was 78 mm. of mercury and he was conscious and clear mentally. Levarterenol was administered by intravenous drip to maintain the blood pressure at about 100/60 mm. of mercury. Electrocardiographic tracings were made. The patient was taken to his room at 3:30 p.m.

For a day after resuscitation the patient was uncooperative and belligerent, but thereafter he was alert and cooperative, without personality changes or other evidence of brain damage.

On March 20, the third day, pulmonary edema developed. It was relieved by withdrawing 250 cc. of blood. On the fourth day an episode of ventricular tachycardia lasted two hours, then normal sinus rhythm resumed spontaneously.

Full maintenance dosages of digitalis, quinidine and anticoagulants were administered. The patient was discharged April 22, 1959, 36 days after admission, and at last report had returned to work as a plumber.

Electrocardiograms were made from time to time during the hospital stay. Because of the presence of surgical dressings, only the standard leads were used for the first few days. The tracing taken in the recovery room (Figure 1) showed a chaotic rhythm with AV dissociation. There are runs of unifocal ventricular premature contractions and multifocal ventricular premature contractions. The tracings done April 20, two days before dismissal from the hospital (Figures 2 and 3), were characteristic of first degree heart block, right bundle branch block, anteroseptal infarction and posterior infarction.

Presented before the Section on Anesthesiology at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

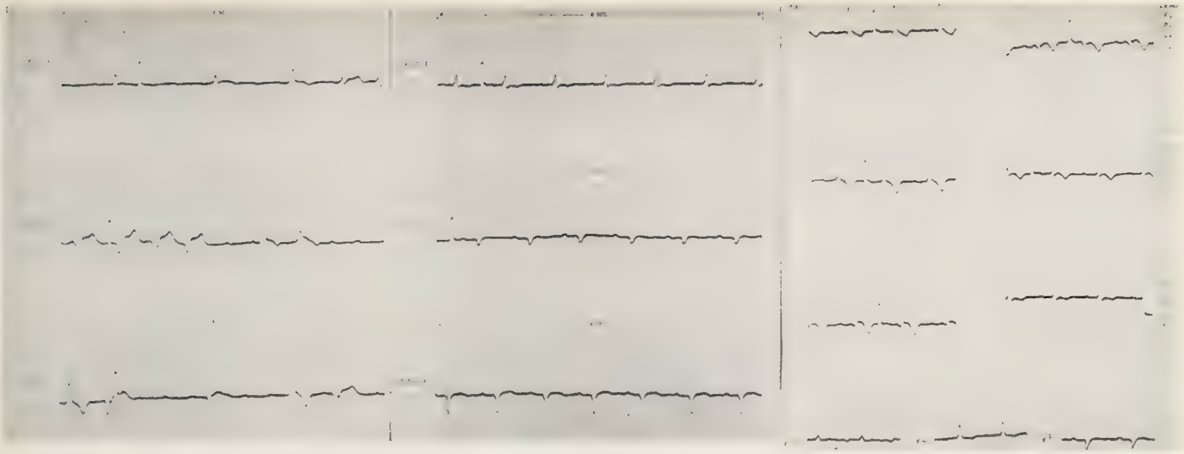

Figure 1 (Case 1).—*Left:* Tracings made in recovery room showing chaotic rhythm with AV dissociation. *Center and right:* Tracings two days before dismissal of patient from hospital, characteristic of first degree heart block, right bundle branch block, anteroseptal infarction and posterior infarction.

CASE 2. The patient was a 56-year-old Caucasian man, a cattle buyer. While driving to work on the morning of May 18, 1959, he had an attack of substernal pain which passed spontaneously, then recurred in a few minutes with increased intensity. He soon became unconscious. A friend placed two nitroglycerin tablets under the patient's tongue and he promptly regained consciousness. He was transported by ambulance to the emergency room of the Riverside Community Hospital where he arrived at 8:50 a.m.

He was examined by an internist who administered morphine sulphate, 15.0 mg., intravenously. An electrocardiogram was consistent with posterior myocardial infarction.

While waiting on a stretcher for transfer to his room, the patient told his wife that he felt numb; he lost consciousness and rapidly became cyanotic. No heart sounds were audible and vigorous pounding on the chest did not restore the beat. The emergency alarm was sounded and in four minutes a surgeon and an anesthesiologist arrived. An incision was made at the fourth left intercostal space, an endotracheal tube was inserted and controlled respiration was started. The time was 9:55 a.m.

The heart was cyanotic and in ventricular fibrillation. Massage at a rate of 60 to 70 per minute was done for eight to ten minutes. Three electrical shocks failed to arrest the fibrillation. Massage was reinstituted. Procaine amide hydrochloride, 100 mg., was injected into the heart. Three further shocks arrested the fibrillation. At 10:25 a.m. another 100 mg. of procaine amide hydrochloride was given intravenously, and at 10:30 a.m. 20 mg. of Vasoxyl® (methoxamine in water) was administered by vein. Shortly thereafter ventricular fibrillation resumed and electrical shock was again applied. Massage was resumed, and slowly the heart began to beat spontaneously. At 10:40 a.m. the rate was 60 and bleeding was observed from the edges of the operative wound. The patient lay flaccidly during the whole procedure. After 20 minutes' observation, the chest was closed and the patient was moved to the recovery room at 11:20 a.m.

Systolic blood pressure remained at about 100 mm. of mercury for the next two hours. More procaine amide hydrochloride was given intravenously. The patient was moved to his room at 2:30 p.m. The systolic blood pressure having slowly decreased to 80 mm. of mercury, one unit of blood was infused and levarterenol was given by intravenous drip for 36 hours, after which the blood pressure was maintained without medication.

About six hours after the cardiac arrest, the patient had alternate periods of quiet and restlessness. For 22 hours he did not respond to stimuli, but at last he opened his eyes on command. Twenty-four hours later he was completely clear and alert and remained so.

With the exception of one episode of ventricular tachycardia, convalescence was uneventful. Numerous electrocardiographic tracings confirmed the diagnosis of acute posterolateral myocardial infarction.

The patient was maintained on digitalis, quinidine and anticoagulants and was discharged June 8, 1959, 21 days after admission. When last heard from, he was back at work.

Electrocardiographic tracings taken before the cardiac arrest (Figure 2) were interpreted as showing changes suggestive of posterior infarction. Tracings taken later the same day (Figure 3) verified the earlier impression. Figure 4 shows tracings taken four days later during an attack of tachycardia.

COMMENT

By extension, the experience in these two cases would seem to indicate that a few victims of cardiac arrest occurring outside the operating room may be saved, provided the institution is equipped to deal with them and the medical and nursing staff are specifically trained to carry out the procedure. Hospitals in a position to consider coping with occasional cases of cardiac arrest outside the operating room might develop a plan of action by adapting the following suggestions to their peculiar circumstances:

1. *Alarm system.* A system involving visual as well as auditory alarm should be extended to all points in the institution.

2. *Professional team.* Any member of the medical staff may be called upon to diagnose arrest and start cardiac resuscitation. Therefore, each physician should review the subject and consider the indications for resuscitation. Some of the determining factors should include the time elapsed since the beginning of arrest, existing disease or traumatic condition and facilities and personnel available. The nursing staff should also be trained to recognize cardiac arrest, to report it promptly and be of aid in treatment.

The alarm having been given and treatment started, the original physicians and nurses should continue only until the arrival of a team especially trained in cardiac resuscitation. This should include surgeon, internist, anesthesiologist, nurses and technicians to operate technical equipment.

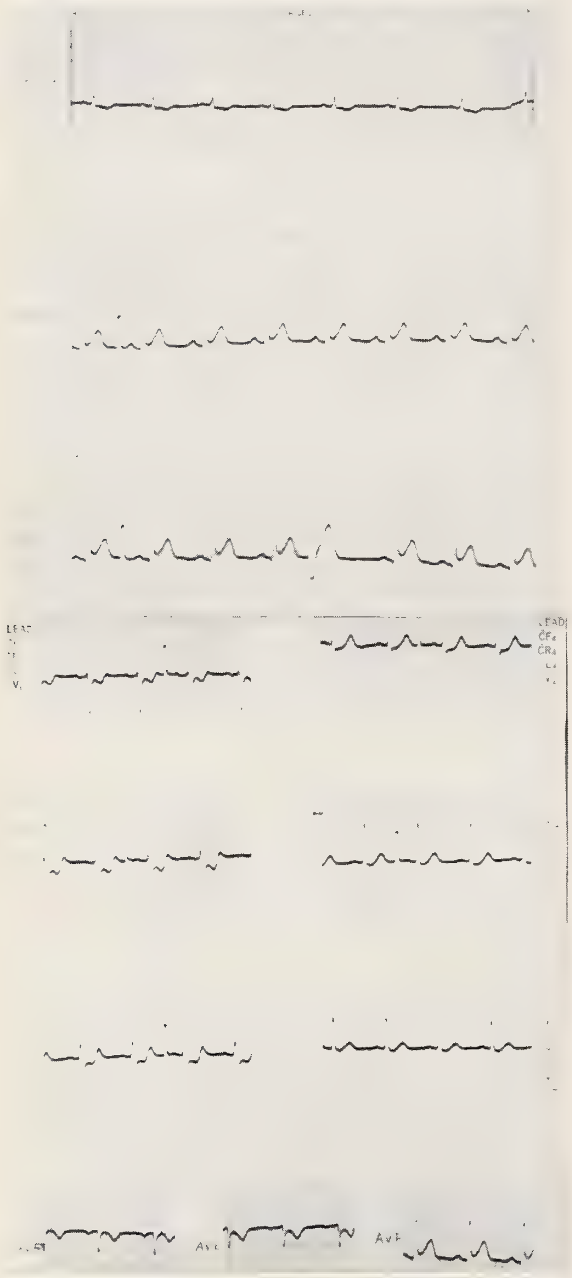

Figure 2.—Tracings (Case 2) taken before cardiac arrest, showing changes suggestive of posterior infarction.

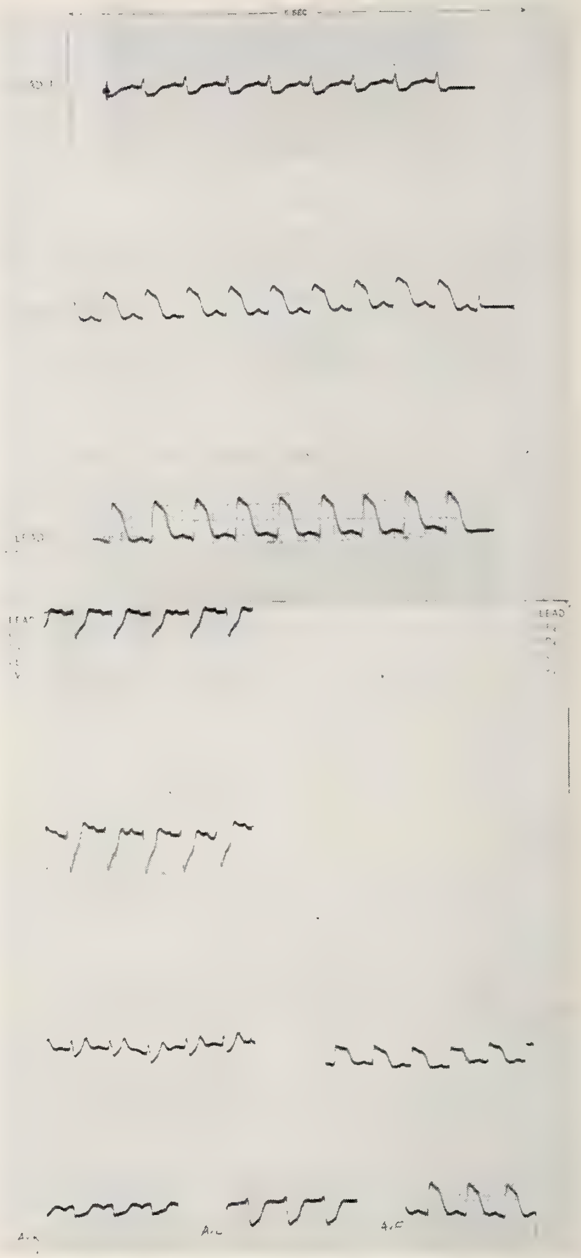

Figure 3.—Tracings made later the same day as Figure 2 verified the earlier impression.

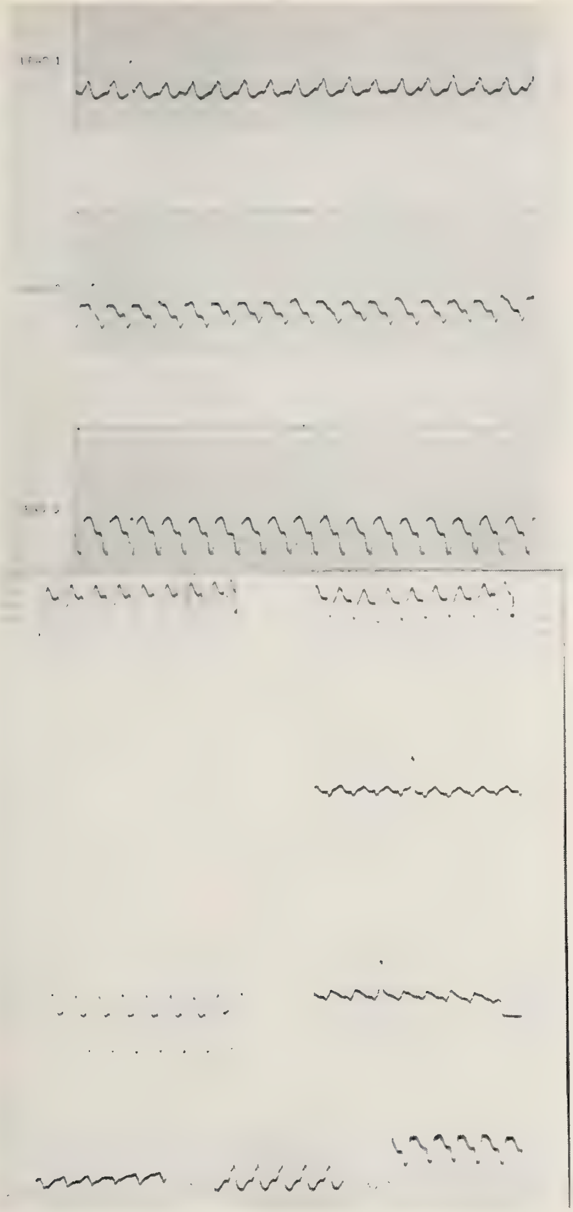

Figure 4.—Tracings made during an attack of tachycardia four days after Figures 2 and 3.

3. *Facilities.* Equipment to begin dealing with the emergency should be located at each nursing station, x-ray department, recovery room, intensive care ward, nursery and emergency room. A sterile scalpel, a stethoscope and portable apparatus for the administration of oxygen under positive pressure should suffice.

Centrally located cardiac emergency equipment may be summoned along with the professional team. This should include surgical instruments and drapes, laryngoscopes and endotracheal tubes, drugs, a cardiac defibrillator and pacemaker and an electrocardiograph.

SUMMARY

In two recent cases of cardiac arrest in the hospital but outside the operating room, an alarm system summoned a well organized team who carried out cardiac massage and related treatment, saving both patients without any demonstrable brain damage. Both patients returned to work.

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A Case of Leptospirosis Ballum In California

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In RECENT YEARS leptospirosis has become recognized as a medical and veterinary problem of worldwide importance. A report by the United States Department of Agriculture[21] estimated that bovine leptospirosis causes an annual loss of over one hundred million dollars to the American livestock industry. Although leptospirosis in man is reported relatively infrequently in the United States, in many parts of the world it is a significant military[17] or occupational[19] hazard. It would be difficult to determine whether the increased number of cases of leptospirosis reported in recent years is due to a rising incidence, to increased awareness of the disease, or to both.

Recognized human leptospirosis has usually been caused by *Leptospira canicola, L. icterohaemorrhagiae*, or *L. pomona* in the United States, where the principal reservoirs of infection are dogs, rats and cattle and hogs. The only other serotypes implicated in naturally acquired human leptospirosis in this country have been *L. australis A* (one serologically confirmed case),[18] *L. autumnalis* (sharply-localized outbreaks of "Fort Bragg fever" in North Carolina in 1942, 1943 and 1944),[7] *L. Ballum* (among workers in a single research laboratory),[20] *L. bataviae* (one serologically confirmed case),[6] *L. grippotyphosa* (three serologically confirmed cases),[1,4] and the *L. pyrogenes group* (one serologically confirmed case).[22] Only *L. canicola, L. icterohaemorrhagiae*, and *L. pomona* have been reported in California, in man or in animals.

LEPTOSPIROSIS IN CALIFORNIA

Meyer, Eddie and Anderson-Stewart[15] were the first to report leptospirosis in California, in 1938. They found that about one-third of the rats in

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northern California showed darkfield evidence of leptospirae in their kidneys. Twenty-two cultures of leptospirae isolated from rats in this area were identified as *L. icterohaemorrhagiae.* These investigators also reported serologically confirmed Weil's disease among San Francisco sewer workers, and were the first to report the presence of a serotype other than *L. icterohaemorrhagiae* in the United States. Seven strains of leptospirae which they isolated from jaundiced dogs in northern California were identified as *L. canicola.*

In 1939, Meyer, Eddie and Anderson-Stewart[16] reported that nearly one-fourth of a group of dogs taken at random in Northern California had significant titers of agglutinins for *L. canicola.* In addition, a strain of leptospira isolated from a case of febrile meningitis in a dog-pound worker was proven to be *L. canicola.* In 1941, Greene[8] noted that about 20 per cent of dogs taken at random in Southern California had serum agglutinins for *L. canicola.*

The *L. pomona* serotype was first isolated in California by DeLay, Howarth and Eddie,[3] who found the organism in cattle in 1955. In the same year, Grossman, Levin and O'Neill[9] reported two serologically confirmed human cases of *L. pomona* meningitis in California. One patient was a pig ranch owner, the other dug trenches in a field where there were many cattle. Howarth[10] recorded positive reactions to *L. pomona* in 11 per cent of 5,619 bovine sera, 18 per cent of 1,216 porcine sera, and 19 per cent of 21 equine sera submitted for help in diagnostic problems by California veterinarians over a period of five years. In addition, 21 per cent of 340 canine sera contained *L. canicola* agglutinins. More recently, the Los Angeles County Livestock Department reported[11] that 26 per cent of 163 bovine sera tested were positive for leptospirosis (presumably *L. pomona)* and that *L. canicola* was implicated serologically in an outbreak of gastroenteritis among the animals of a large goat dairy.[12]

The California Public Health Statistical Report for 1957[2] listed 34 cases of probable leptospirosis in man from 1949 to 1957. The diagnosis in 23 of these cases was based on increasing serological titers, clinical symptoms and epidemiological evidence. Of the 23 cases, five were attributed to *L. icterohaemorrhagiae*, eleven to *L. canicola*, and seven (since 1951) to *L. pomona.* In four the organism was not classified.

Although *L. ballum* has been known to cause human leptospirosis in other parts of the world, it was only recently that Stoenner and Maclean[20] reported the first human infections caused by this serotype in the United States. These cases involved eight out of 58 persons in one laboratory who had frequent contact with Swiss albino mice. Many of these mice (80 per cent of the breeding females) were excreting *L. ballum* in their urine. The following is a description of the first case of leptospirosis due to *L. ballum* to be reported in California.

CASE REPORT

The patient was a 57-year-old man, a laboratory assistant who had routinely handled experimental animals including rabbits, guinea pigs, rats and mice. For some time before he became ill he had worked only with mice and rats, and he had frequently been bitten by them. His illness began with headache and malaise, which progressed to migrating myalgia, high fever (104°F.), anorexia, arthralgia in the knees and pain in the legs, chest and back. During the next few days he noted increased severity of these symptoms and the appearance of moderate conjunctivitis, testicular pain and "dark foamy urine." The patient was given an unspecified antibiotic by a physician on the fifth day of illness, and he became afebrile in about a week. The total duration of illness was ten days.

Leptospirosis was not initially considered, but after the patient returned to work it was thought that an examination should be made for Weil's disease because of the history of frequent contact with rats and mice. Blood specimens were taken 23, 59 and 158 days after the onset of illness. The first two specimens were submitted to the Communicable Diseases Center at Atlanta, Georgia, where they were examined by the "agglutination-lysis" test with 11 different leptospiral serotypes. The results were reported as follows:

	Agglutination Lysis Titers			
	L. ballum	L. canicola	L. icterohaemorrhagiae	All Others
23-day specimen	1:512	1:128	1:32	Negative
59 day specimen	1:128	Negative	Negative	Negative

After the final blood specimen was obtained, all three sera were tested simultaneously in our laboratory, and "agglutination-lysis" titers against *L. ballum of* 1:512, 1:256 and 1:128, in chronological order, were found.

DISCUSSION

The cases of leptospirosis *ballum* reported by Stoenner and Maclean[20] were characterized by headache, fever (104-105° F.), weakness, chills and sweats and various manifestations of myalgia. These investigators were the first to associate orchitis with leptospirosis; they found this symptom in each of the four clinical cases they reported in detail. In their series, orchitis appeared two to four weeks after onset, as compared with five days in the present case. They reported no conjunctivitis, which however, is quite commonly associated with human leptospirosis.

A complicating factor in the present report is the fact that the patient had had testicular pain six years previously, in Korea. After it subsided, a scrotal mass was discovered, which is still present.

It is still fairly common practice to include only the three major serotypes in screening sera for leptospirosis in this country; in veterinary medicine, often only *L. pomona* is used. However, several surveys recently have shown that additional serotypes are endemic among wild animals in certain areas in the southern and eastern United States. The following serotypes have been cultured from such animals as mice, raccoons, opossums, foxes, skunks and wildcats: *L. australis*,[5,13] *L. autumnalis*,[14] *L. ballum*,[13] *L. grippotyphosa*,[13] *L. pomona*,[13] the *L. hebdomadis group*,[13] and the *L. mitis-L. hyos* group.[5,13] Until routine testing can be done for all the serotypes that have been implicated in leptospirosis in this country, the true incidence will not be known.

Although the maximum titer to *L. ballum* found in the case reported herein is not high, the declining titer and the clinical history combine to make plausible the assumption that the illness was caused by this serotype of leptospira. The possibility remains that the actual serotype may have been a new or unexpected one related to *L. ballum*, and that the titers observed were owing to cross-reactions.

SUMMARY

A laboratory assistant who routinely handled rats, mice, rabbits and guinea pigs became ill with symptoms which were similar to those often reported in mild leptospirosis. The serologic evidence and the clinical history are compatible with a retrospective diagnosis of leptospirosis due to infection with *Leptospira ballum*. This is the first reported evidence for the presence of the *L. ballum* serotype in California.

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California
MEDICINE

For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Medical Television

For many years all mass media in the United States have found the practice of medicine and its effect on people an attention-getter. Newspapers, magazines, comic strips, radio, motion pictures and, more recently, television, have seized on this topic as a means of building up an audience. Everybody, it seems, is interested in health, either his own or someone's else.

Rex Morgan, M.D., Doctor Kildare and other fictional physicians have practiced on newspaper pages or on radio for many years. Their colleagues are legion in other mass media, including some reprobates who cast dishonor on the profession but frequently enhance the entertainment value of a story or play. One is reminded of the only doctor in the frontier town in television's potboiling western films. He is either a saint who will attend a horse or a dog between calls on real people or a scoundrel who was drummed out of practice in "the east" and settled in a drunken stupor in a town so remote from civilization that he hopes to escape his less than laudable past.

It is noteworthy that all fictional physicians, be they "good guys" or "bad guys," are somehow set apart both by authors and by auditors as someone a little special. The title *doctor*, even when its holder disgraces it, automatically seems to mean an educated and responsible person, worthy of notice.

This implied respect is today alluded to in nostalgic remembrance of the old family doctor with his faithful horse and sagging buggy. Public awareness that both the doctor and his equippage have kept pace with the total developments of the Twentieth Century is sometimes lacking. Along with this loss of recognition has come a belittling in some quarters of the high position today's doctor actually maintains in preserving and bettering the health status of people.

Granted today's highly trained physician does not often sit chin-in-hand pondering through the night over a sick patient. The fact is that he doesn't need to go through this pious procedure; with his 1960 knowledge he has been able to diagnose and to prescribe therapy and can devote his time to other patients instead of puzzling for hours over what ails the sole patient in the classic picture.

What the public is prone to forget is that the doctor who eschews the bedside chair is not displaying a lack of interest or of integrity; he is simply devoting his training and skill to more patients, all of them with a much better prospect of recovery than their forebears had at the turn of the century.

This is one of the aspects which caused the California Medical Association last winter to vote for an augmented program of public relations. The program was planned around the problem of acquainting the public with today's physician, with his training, his skills and, above all, his limitations.

Nobody knows better than physicians that the practice of medicine is not an exact science. It has limitations, fortunately fewer each year, which may be obscured in the super-scientific hopes of today.

If a public relations program can succeed in portraying today's physician exactly as he is, that program will be a success. While it may in good conscience stress the physician's strong points, at the same time it must point out those areas where exactness and certainty may not reasonably be expected.

Current plans for the C.M.A. program encompass a series of television programs, each devoted to a single disease entity which is widely known to people and on which up-to-date knowledge may be explained to a mass audience. These programs would appear as public service programs on television stations throughout the state.

Each program would be accompanied by a "live" presentation by several local physicians who would discuss the topic of the program, the impact of the particular disease on the local community and the resources available for handling the problem right at home.

In addition, the plan would take in two programs that would stress the more dramatic aspects of medical or surgical practice, such as cardiac operations, corneal transplants, aorta grafts and other procedures in which California viewers have shown intense interest in recent years.

To carry out this program, local cooperation will be vital. Local medical societies will be called upon to supply qualified discussants for the "live" portions of the programs. They will be asked to confer with local station operators for assignment of time. They will preview the TV films, plan their discussion procedures. They will even direct the attention of their patients to these public educational programs, even in competition with westerns and mysteries.

The Council of the California Medical Association is now engaged in previewing the pilot programs in this series and in conferring with physicians and technical consultants in order to produce the best and most technically accurate films that can be achieved.

The Council has asked all county medical societies in areas where TV stations exist to make preparations for this series and to participate in it. Specifically, it has asked that these societies name committees of interested and willing members who can attend to the local aspects of the statewide plans.

With the cooperation of the local societies the C.M.A. hopes to produce a series of TV presentations which will attract audiences throughout the state. If these programs can present to the public the physician of today as he really is, and can take the people into the confidence of the profession by open discussions over the air waves, much good will be done for the public and the profession alike.

If the traditions of the medical profession, the devotion to the care of the individual patient, the individual and personal attention of the physician and the placing of the patient's health above all other considerations can be portrayed, this program will be outstanding.

In the final analysis, such a program will represent one more example of the profession's use of a new tool—electronics—for better care and service to its patients. The opportunity should be used to the fullest.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 461st Meeting of the Council, Los Angeles, Ambassador Hotel, July 9, 1960.

The meeting was called to order by Chairman Sherman in the Ambassador Hotel, Los Angeles, on Saturday, July 9, 1960, at 9:30 a.m.

Roll Call:

Present were President Foster, Speaker Doyle, Vice-Speaker Heron, Secretary Hosmer, Editor Wilbur and Councilors Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Gifford, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall.

Absent for cause were: President-Elect Bostick, Councilors MacLaggan, Rogers and Murray.

Present by invitation were: Doctors Batchelder and Miller and Messrs. Thomas, Clancy, Collins, Marvin, Whelan and Tobitt; Mr. Hassard of legal counsel; county executives Scheuber of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Grove of Monterey, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Donmyer of San Bernardino, Nute of San Diego, Neick of San Francisco, Thompson of Stockton, Wood of San Mateo, Donovan of Santa Clara, Dermott of Sonoma and Bailey of Tulare: Messrs. Paolini and Lyon of California Physicians' Service; Dr. Malcolm Merrill, State Director of Public Health; Dr. Daniel Blain, State Director, Mental Hygiene; Mrs. Eunice Evans of the State Department of Social Welfare; Mr. Cecil Dickson, Legislative Representative of the A.M.A., Washington, D. C.; Doctors T. Eric Reynolds, Stuart Knox, Donald Harrington, Robert Gentry, Werner Hoyt, Donald Abbott, John Schaupp and others.

1. *Minutes for Approval:*

On motion duly made and seconded, the minutes of the 460th meeting of the council, held June 4, 1960, were approved.

2. *Membership:*

(a) A report of membership as of July 7, 1960, was presented and ordered filed.

(b) On motion duly made and seconded, 556 delinquent members whose dues have been received, were voted reinstatement.

(c) On motion duly made and seconded, one applicant was voted Retired Membership. This was Royal Scudder, Mendocino-Lake County.

(d) On motion duly made and seconded in each instance, 11 applicants were voted Associate Membership. These were: John W. Brown, Alameda-Contra Costa County; Oscar J. Balchum, Lemuel J. Haywood, Earl William Kendrick, Robert L. Peters, Los Angeles County; William H. Lyon, Jr., Marin County; George William Stevenson, Orange County; Clyde Carroll Jones, San Diego County; Erwin C. Sage, Louise van der Reis, San Francisco County; and Clarice H. Haylett, San Mateo County.

(e) On motion duly made and seconded in each instance, reductions of dues were voted for four members for reasons of prolonged illness or postgraduate study.

3. *Report of Officers:*

President Foster discussed the recent meeting of the A.M.A. House of Delegates and presented the

PAUL D. FOSTER, M.D.	President
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POLIOMYELITIS

*A Resolution Adopted by the Council of the California Medical Association**

WHEREAS, in the five years that the Salk poliomyelitis vaccine has been used, at least 500 persons in California have been saved from death and another 7,500 have been spared the crippling aftereffects of paralytic poliomyelitis, and

WHEREAS, the record would be even better if more people would obtain the immunizations, and

WHEREAS, the Salk vaccine has proved to be extraordinarily effective, four inoculations reducing by more than 90 per cent a person's risk of being paralyzed or killed by poliomyelitis, and

WHEREAS, 40 per cent of the population now has maximum protection against poliomyelitis, 11 per cent have been partially vaccinated with one or two injections, but 49 per cent, or 4,400,000 persons in California, under age 40, have had no vaccine at all, and

WHEREAS, poliomyelitis strikes at all age groups and more than 400 paralytic cases were reported in California in 1959, a 76 per cent increase over 1958, and

WHEREAS, if the pattern of recent years is repeated poliomyelitis will aim its most vicious blows at the 741,700 California children under the age of five years who have had fewer than four immunizations, and

WHEREAS, the Salk vaccine will for some time be the only widely available immunizing agent against poliomyelitis, and

WHEREAS, many county medical societies in California have sponsored excellent poliomyelitis immunization programs in their communities in the past few years, and

WHEREAS, strong medical leadership is needed to inspire confidence and encourage family participation in the vaccination program, and

WHEREAS, such programs can constitute one of the profession's finest public service opportunities; now, therefore, be it

Resolved: That the Council of the California Medical Association strongly urges that every California physician assume responsibility for making certain, whenever possible, that all members of families he serves receive protection against poliomyelitis by having the full course of Salk vaccine; and be it further

Resolved: That the Council of California Medical Association highly commends county medical societies for the exercise of community leadership in the poliomyelitis vaccination program and urges that all county societies meet with county and local health department representatives to create study committees to survey the problem of immunization as it may exist in the local areas, and to develop and implement a satisfactory program, using all reasonable measures, to afford the widest possible protection from utilization of Salk vaccine in the community and to assure that no Californian need be subject to needless risk of paralytic poliomyelitis.

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*Initially approved by the C.M.A. Committee on State Medical Services

program of the Michigan Association of Professions for consideration. On motion duly made and seconded, it was voted to refer this item to the Commission on Public Policy for study and report back to the Council with recommendations.

A letter from Dr. Askey thanking the officers and members of the Council for the reception given in his honor was read. On motion duly made and seconded, it was voted to reply to Dr. Askey's letter on behalf of the Council, all members of the Council to sign the letter.

4. *Financial:*

Chairman Heron presented a report on the current cash balances of the Association, which was ordered filed. Dr. Heron reported on the request of the Committee on Postgraduate Activities for an addition of $800 to its budget to reinstitute a circuit course in the Redding area. On motion duly made and seconded, it was voted to approve this request.

5. *Committee on Committees:*

Council Chairman Sherman reported on the recommendations of the Committee on Committees that Francis J. Cox, M.D., of San Francisco be appointed to the Bureau of Research and Planning to replace John M. Rumsey, M.D., of San Diego, resigned. On motion duly made and seconded, this recommendation was approved.

6. *Bureau of Research and Planning:*

Chairman Hoyt presented a progress report outlining the areas of study to be undertaken by the bureau. The bureau is continuing with its study of the role of government in the purchase of medical services.

7. *Commission on Medical Services:*

Chairman Harrington reported that House of Delegates resolutions referred to the Commission and its committees are under study. He suggested the need for a progressive and continuous study of hospital relations, which was referred to the staff for study.

(a) *Liaison Committee to State Department of Social Welfare:* Chairman Quinn informed the Council of the consideration being given by the Department of Social Welfare to the pilot program on health evaluation examinations of Welfare recipients. Dr. Quinn reported that the public assistance medical care program is operating in the black. Discussion was held on the desire to experiment on a broader basis than the Glenn County study, in an effort to provide prepaid medical care to OAS recipients. On motion duly made and seconded, it was voted to direct the Liaison Committee to pursue this with the State Department of Social Welfare, working in cooperation with the California Physicians' Service and the Commission on Medical Services. Any county to be selected for such an experimental program would be determined in cooperation with the Department of Social Welfare, C.P.S. and the county societies.

(b) *Committee on Aging:* Walter Batchelder, M.D., reported that the first meeting of the 100-man Steering Committee to develop a format for the Governor's Conference on Aging had been held. Ten divisions have been established, one on health problems of the aged. Dr. Batchelder, Mr. Sloate of the State Department of Social Welfare, Dr. Breslow and Mr. Murphy of the Public Health Department will act as staff for the health division and serve as liaison between the State Department, C.M.A. and the Steering Committee. The Committee on Aging will meet with the physicians on the Steering Committee at an early date.

(c) *Liaison Committee to California Physicians' Service:* The Interim report of the C.M.S.-C.P.S. Liaison Committee was presented by Dr. Donald Harrington. On motion duly made and seconded, it was voted to refer this report to an Ad Hoc Committee composed of Doctors Quinn, chairman, O'Neill, Wilbur, Miller and Gifford to review the recommendations and report back in the afternoon session. Following the report of the Ad Hoc Committee, on motion duly made and seconded in each instance, the Council took the following action:

1. That C.P.S. should be prepared to advance and grow in the field of prepaid medical care and to continue to cooperate with federal and state agencies;

2. That C.P.S. continue the service concept adjusted to varying incomes and fee schedules and continue to offer programs of other types;

3. That C.P.S. in its attempts to meet consumer demands not be limited in its marketing approach by regional or county programs but be able to make available all contracts on a statewide basis: Doctors O'Connor, Teal, Wheeler, Kirchner and Gifford voted in the negative and were so recorded.

4. Reaffirmed the 1954 policy of the Council outlining the method by which changes in C.P.S. fee schedules should be made (the Committee on Fees to the Commission on Medical Services to the Council to the Board of Trustees);

5. That the Liaison Committee to C.P.S. be granted the authority to poll the members of the C.M.A. or the participating physicians of C.P.S. at the request of the Board of Trustees and the C.M.A. Council or to poll the members of a county medical society at the society's request.

On motion duly made and seconded, the report of the Liaison Committee was approved as amended and modified.

8. *Commission on Public Agencies:*

(a) *Committee on State Medical Services:* Chairman Omer Wheeler presented a resolution concerning poliomyelitis, which on motion duly made and seconded, was approved. (See text on page 169.)

Dr. Wheeler also reported on the discussions by the committee on the 1956 House of Delegates resolution dealing with narcotic addiction. The committee is in agreement that addiction has medical implications, that the profession should assume leadership, in part, in the control of the spread of addiction. On motion duly made and seconded, it was voted to approve establishment of a committee on dangerous drugs under the Commission on Public Agencies to pursue this matter and act in a liaison capacity to any state agency interested in this problem. On motion duly made and seconded, the matter of appointments to this subcommittee was referred to the Committee on Committees.

(b) *Committee on Mental Health:* Chairman Knox reported on the growing use of hypnosis. On motion duly made and seconded, it was voted that for the purpose of Medicare and other prepaid state or federal programs, hypnosis be considered a component of therapy, not a separate procedure, and that no charge should be made for hypnotic treatment per se, only for the general therapy.

9. *Commission on Public Policy:*

Committee on Public Relations: Dr. John Schaupp, chairman of the subcommittee on Radio, Television and Motion Pictures, reviewed the approach being taken by the subcommittee in presenting a true image of the profession to the public with the interwoven messages of medicine to be presented in good taste and in a delicate fashion. On motion duly made and seconded, the approach being taken by this subcommittee was approved.

Dr. Schaupp recommended that each county medical society form its own committee or designate an existing committee to work on a local level in cooperation with the C.M.A. committee, if a county society desires to do so. On motion duly made and seconded, it was voted to approve this recommendation and to send a letter to each society requesting implementation of the recommendation and that the societies discuss this with their councilor and assigned C.M.A. staff member.

Mr. Clancy discussed the concept of establishing a medical student scholarship fund. On motion duly made and seconded, it was voted to refer this matter to the Commission on Medical Education for study and report back to the Council, if possible a preliminary report to be presented at the next meeting.

10. *Commission on Cancer:*

Chairman Davis reported that the committees of the Commission on Cancer had delineated their areas of responsibility and activity. He also reported that the Committee on Cancer Education is investigating the cost of revising the C.M.A. Cancer Studies and that the Committee on Tumor Tissue Registry is reviewing the administrative procedures of the registry. The Committee on Consultative Tumor Boards has recommended that an annual roster of approved tumor boards within the state be prepared and given to each county medical society. On motion duly made and seconded, the committee was authorized to proceed in this regard.

11. *Staff Report:*

Mr. Hassard introduced Mr. William Tobitt, a new addition to the staff. Mr. Tobitt will be working primarily in the field of radio, television and motion pictures and will also assist the staff in preparing written materials.

12. *Report of Affiliated Organizations and Invited Guests:*

(a) *Department of Public Health:* Dr. Malcolm Merrill reported on the polio incidence in California, stating that it was higher this summer than last summer. He also reported that the live virus had not been licensed for use in this country at this time, and there was no information on when it might be available. He also reported on the formation of an Interagency Council on Tuberculosis Control, to urge all interested agencies and organizations to do more in the field of tuberculosis.

Dr. Merrill reported on the court action of the Humane Society of the United States vs. the State Department of Public Health, wherein the court dismissed the case against the department for its handling of the College of Medical Evangelists' use of animals for research purposes. He advised that this matter would probably be taken to the higher courts. He further reported to the Council on the formation of a technical and policy advisory committee to assist the department in its study of chemical residue on food products. Dr. Ralph Teall has been appointed to serve on this committee.

(b) *State Department of Social Welfare:* Mrs. Eunice Evans, deputy director of the State Department of Social Welfare, reported that the staff work and coordination for the Governor's Conference on Aging has been assigned to the department. She further reported that a new approach is being taken by the department, wherein more emphasis will be placed on service; this will involve close cooperation with the medical profession.

(c) *State Department of Mental Hygiene:* Dr. Daniel Blain was invited to present a detailed report on the program of his Department at the next meeting of the Council.

(d) *California Physicians' Service:* Dr. Ivan Heron reported that C.P.S. was experimenting with a program of unit deductibles for out-patient services and that the board has authorized the sale of 5,000 contracts to test the market acceptance and experience of this new concept. He also reported that the board and its committees are formulating plans to promote concepts imposed in House of Delegates resolutions, and that the board has approved the recommendation that relative value procedure 029 or its A and B Schedule equivalent be paid without calling for a medical report from the attending physician.

The total membership of C.P.S. as of June 30, 1960, was 788,194, representing a net increase of 5,000 during the past two months. For the 12-month period ending May 31, 1960, C.P.S. had an operating income in its commercial program of slightly over forty million dollars and in addition had an investment income of close to $600,000. During that fiscal year two and one-half million dollars were placed in the stabilization reserve as compared to one million nine hundred thousand dollars during the preceding 12-month period. Net administrative expenses are continuing to decline.

13. *Annual Conference of County Society Officers:*

Chairman Sherman appointed an Ad Hoc Committee composed of Doctors Todd, Murray, Gifford, Miller, Anderson and Morrison to develop recommendations for the format for the conference and the time when it will be held, to report at the next meeting of the Council.

14. *C.M.A. Mailing List:*

A request from the Presbyterian Medical Center of San Francisco regarding use of the mailing list to announce the operation of the center was presented. On motion duly made and seconded, it was voted to grant approval to the Presbyterian Medical Center to use the mailing list for this purpose, all costs to be paid by the center.

15. *New Business:*

(It was announced that Dr. John Murray had recently undergone surgery and that Mrs. Arthur Kirchner was currently in the hospital. On motion duly made and seconded, it was voted to send the regards of the Council to each.)

Executive Session.

Adjournment:

There being no further business to come before the Council, the meeting was adjourned at 5:00 p.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

In Memoriam

BOWER, ALBERT GORDON. Died in Pasadena, August 2, 1960, aged 70. Graduate of Rush Medical College, Chicago, 1916. Licensed in California in 1920. Doctor Bower was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✤

COLLINS, CLINTON DARWIN. Died in Carmel, July 24, 1960, aged 75. Graduate of Cooper Medical College, San Francisco, 1911. Licensed in California in 1911. Doctor Collins was a member of the Fresno County Medical Society.

✤

DE LORIMER, ALFRED A. Died in San Francisco, July 19, 1960, aged 58. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1927. Licensed in California in 1927. Doctor De Lorimer was a member of the San Francisco Medical Society.

✤

FRIEDBERG, IRWIN W. Died July 2, 1960, aged 59. Graduate of New York University College of Medicine, New York, 1924. Licensed in California in 1928. Doctor Friedberg was a member of the Los Angeles County Medical Association.

✤

GRAUN, RICHARD E. Died July 22, 1960, aged 66. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1930. Licensed in California in 1930. Doctor Graun was a member of the Siskiyou County Medical Society.

✤

HUSTON, JAMES MALLERNEE. Died July 15, 1960, aged 66. Graduate of University of Cincinnati College of Medicine, Ohio, 1921. Licensed in California in 1922. Doctor Huston was a member of the Los Angeles County Medical Association.

✤

IRIKI, WALTER KELSUKE. Died in Berkeley, July 25, 1960. aged 57. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1932. Licensed in California in 1932. Doctor Iriki was a member of the Alameda-Contra Costa Medical Association.

✤

LOWE, EUGENE L. Died June 22, 1960, aged 57. Graduate of Friedrich-Wilhelms-Universitat Medizinische Fakultat, Berlin, Prussia, Germany, 1928. Licensed in California in 1942. Doctor Lowe was a member of the Los Angeles County Medical Association.

✤

LUNDEGAARD, ELLERT EMANUEL. Died in Santa Barbara, July 14, 1960, aged 65. Graduate of Northwestern University Medical School, Chicago, Illinois, 1930. Licensed in California in 1930. Doctor Lundegaard was an associate member of the Ventura County Medical Society.

✤

PFAFF, EARL K. Died in Loma Linda, June 27, 1960, aged 80. Graduate of Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906. Licensed in California in 1923. Doctor Pfaff was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

SIMMONS, EDWARD LINCOLN. Died May 27, 1960, aged 45, of cardiac failure. Graduate of the University of Southern California School of Medicine, Los Angeles, 1949. Licensed in California in 1949. Doctor Simmons was a member of the Santa Clara County Medical Society.

✤

TOURTILLOTT, WALTER W. Died in Yountville, July 5, 1960, aged 88. Graduate of Cooper Medical College, San Francisco, 1904. Licensed in California in 1905. Doctor Tourtillott was a retired member of the Tulare County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

Ambassador Hotel
LOS ANGELES

April 30 to May 3, 1961

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted *to the appropriate section secretary* (see list on this page) no later than November 15, 1960.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 693 Sutter Street, San Francisco 2, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than November 15, 1960. (No exhibit shown in 1960, and no individual who had an exhibit at the 1960 session, will be eligible until 1962.)

Medical Motion Pictures

The daytime Film Symposiums which proved so popular during the 1959 and 1960 sessions will be continued in 1961. Evening film programs will be planned for doctors, their wives, nurses and ancillary personnel.

Authors desiring to show films should send their applications to Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Blvd., Los Angeles 5. All authors are urged to be present at the time of showing as there will be time allotted for discussion and questions from the audience after each film.

Deadline: December 1, 1960.

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY	Gardner S. Stout	39 North San Mateo Drive, San Mateo
ANESTHESIOLOGY	Gilbert E. Kinyon	5252 Chelsea Avenue, La Jolla
DERMATOLOGY AND SYPHILOLOGY	Paul M. Crossland	1120 Montgomery Drive, Santa Rosa
EAR, NOSE AND THROAT	Marvin W. Simmons	1020 East McKinley Avenue, Fresno
EYE	Floyd M. Bond	625 Broadway, San Diego 1
GENERAL PRACTICE	A. J. Franzi	3620 Army Street, San Francisco 10
GENERAL SURGERY	William P. Mikkelsen	1930 Wilshire Boulevard, Los Angeles 57
INDUSTRIAL MEDICINE AND SURGERY	John H. Leimbach, Jr.	525 Golden Gate Avenue, San Francisco 1
INTERNAL MEDICINE	Clifford B. Cherry	2400 Beverly Boulevard, Los Angeles 57
OBSTETRICS AND GYNECOLOGY	Edward F. Healey	711 D Street, San Rafael
ORTHOPEDICS	Bret W. Smart	2929 Summit Street, Oakland 9
PATHOLOGY AND BACTERIOLOGY	George J. Hummer	1328 22nd Street, Santa Monica
PEDIATRICS	Harry O. Ryan	194 North El Molino, Pasadena 4
PHYSICAL MEDICINE	S. Malvern Dorinson	450 Sutter Street, San Francisco 8
PSYCHIATRY AND NEUROLOGY	Robert E. Wyers Mark Zeifert	Psychiatry: Robert E. Wyers, Metropolitan Hospital, Norwalk Neurology: Mark Zeifert, 1065 S Street, Fresno 21
PUBLIC HEALTH	Ellis D. Sox	101 Grove Street, San Francisco 2
RADIOLOGY	John R. Bryan	450 Sutter Street, San Francisco 8
UROLOGY	Sam Peck	233 A Street, San Diego 1

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

NUMEROUS INCIDENTS of Salmonella food poisoning outbreaks are on record but it has frequently proved difficult to trace the source of infection. An unusual outbreak due to *S. reading* occurred in the United States in 1956-57. This organism, rarely found before in this country, was suddenly isolated from cases of Salmonella infections in widely separated areas.

A similar picture seems to be appearing now in California, and possibly the United States, with *S. infantis*. The Microbiology Laboratory in Berkeley has been identifying Salmonella cultures by antigenic analysis since 1943. In California *S. infantis* had not been identified before 1954 in man, nor before 1951 in animals.

Human infections identified in 1955 numbered 22, the number increasing each year until 1960, when 116 cases of *S. infantis* were identified by the laboratory through July 8. *S. infantis* has been identified in cultures from 15 counties so far this year, with 40 cases from Los Angeles County, 28 from Alameda County and 13 from San Francisco.

* * *

Sixty-five public health specialists participated in observation training programs in the department during the fiscal year 1959-60. They represented 28 countries, including Afghanistan, Argentina, Australia, China, Japan, Pakistan, Peru, Singapore, South Viet-Nam, Uruguay, West Indies, and Yugoslavia.

* * *

An outbreak of phosdrin insecticide poisoning occurred among workers engaged in aerial crop spraying operations near Bakersfield in June and July.

More than 15 patients were put in hospital and at least twice that many were treated as out-patients for phosdrin poisoning.

Phosdrin is a potent liquid organophosphorous insecticide with a physiological action similar to that of parathion. It is extremely poisonous to animals and man, particularly when absorbed through the skin by contact or through the lungs by inhalation.

Experience has shown that strict observance of specific precautions and safety measures for handling phosdrin is absolutely necessary if the hazard is to be reduced to a minimum.

Investigations by a physician and an engineer from the department's Bureau of Occupational Health, in cooperation with engineers from the Division of Industrial Relations, clearly demonstrated that inadequate observance of such precautions was the primary cause of the outbreak.

* * *

At the request of the State Board of Public Health the department will include in its 1961-62 budget a request for funds to finance the beginnings of a traffic accident prevention program in the department.

Injuries from traffic accidents are among the major health problems, and are the leading cause of death among Californians age 15 to 34 years.

The proposed program, which would engage a physician, engineer, behavioral scientist, statistician and health educator, would seek the basic causes of accidents, a fundamental need in the field of traffic safety. Without this information a scientific approach cannot be made toward accident prevention. The epidemiological research techniques so successful in hunting down and leading to the control of communicable disease can be applied to the study of accidents.

The department would work with the medical profession and with local health departments in a review of medical standards for drivers, and in a review of standards for emergency care and transportation of persons injured in traffic.

WOMAN'S AUXILIARY

TO THE CALIFORNIA MEDICAL ASSOCIATION

A RECENT CONFERENCE on Health Careers conducted by the San Diego County Medical Auxiliary was so intriguing, progressive and rewarding that to report upon it is a privilege. I do so, not alone for its impressive content, but also because it points up the aggressive actions that a component auxiliary of the state is taking, and because it may well serve as a pattern for similar projects throughout the state.

The purpose of the Health Careers Committee (formerly Nurse Recruitment Committee) is to acquaint school and employment councilors, parents, the community at large and, above all, the young people, with the sweep and challenge of career opportunities in the entire health field. The great need for paramedical personnel—dietitians, physiotherapists, medico-social workers and x-ray technicians, to mention but a few—is all too apparent. The Health Career program provides the medium through which the total pool of health manpower can be enlarged.

A major objective of this program should be the introduction of highly motivated young people into the possibilities of service of this type to their fellow men. By means of this enlarged project, the health leadership of the country is calling on new allies, is creating new tools and is building a new base for community action to enlarge the pool of health workers.

The San Diego County Auxiliary is the first in California, so far as I know, to promote a Health Career Conference. I should like to give you a capsule report of this conference.

Initially, the cooperation and support of the counselling departments of the high schools—public, private and parochial—in the city and county, were obtained. A hospital administrator was chosen to speak on the need for trained personnel, relationship of various jobs in the health field to one another, and the rewards of health careers. Exhibits depicting some of the health careers were presented. These exhibits were staffed by personnel in their chosen fields who presented demonstrations of procedures, materials and instruments employed in their work. Informative brochures covering such questions as qualifications, educational requirements, salaries and scholarships were made available. In addition, films on the different health careers were shown. Following the film showing, the students were given practical demonstrations in hospitals and laboratories. In order to make the demonstrations as useful as possible, information outlining the various types of careers, was mailed to the students before the conference. Then, by means of a questionnaire the students were assigned to the facilities that most interested them.

The success of the conference was, in a large measure, due to the cooperation of all the many and varied exhibitors who represented nearly all aspects of medicine. Among the participants were the San Diego Dental Laboratory Association, San Diego Hospital Council, California League of Nursing, San Diego Dietetics Association, to mention but a few. The exhibits included a nursing booth demonstrating a late model incubator unit; an x-ray machine and view boxes and films together with an operational anode tube; speech and occupational therapy units demonstrating the aids employed to assist in training the handicapped; laboratory technologists demonstrating the preparation of tissues and bacteriological procedures.

It was the impression of the Auxiliary that the students' enthusiasm for the tours was owing in large part to the fact that the groups were small and were guided by hospital personnel who were prepared to answer questions.

The importance of this project is emphasized by the fact that 57 students requested appointments for revisits. These students spent a day at the school of nursing, laboratories and pharmacies. In addition, those who manifested an interest in medicine as a career were invited to spend a day with the interns at the hospitals.

The practical aspects of this program will be determined by a five-year survey conducted by the school systems to find out what fields the students who attended the conference finally enter.

The San Diego Auxiliary is to be commended. It is programs of this type—progressive, aggressive, thorough and stimulating—that best perform some of the public services in which the auxiliaries have a keen interest.

MRS. SAMUEL GENDEL
President, Woman's Auxiliary to the California Medical Association

INFORMATION

Poliomyelitis

SOME FACTS concerning the state and nationwide 1960 campaign for immunization.*

The California Situation

There were 408 cases of paralytic poliomyelitis in California in 1959 and 20 deaths. Two-thirds of the patients had disabling residual paralysis. (Table 1 shows trend data for 1950-1959). The overall attack rate was 2.7 per 100,000 population. This varied decidedly, however, in different population groups, the attack rate in unvaccinated children, ages 1 to 5 years, having been 45.0 per 100,000 population.

Although the largest number of cases occurred in the 1 to 5 year olds a significant number of cases occurred in all age groups from 1 to 60.

The 408 cases and the 2.7 attack rate in 1959 compare with 232 and 1.6 respectively in 1958.

Since March 1959 ten communities in California have completed poliomyelitis immunization surveys under the direction of local health departments to obtain factual data concerning the immunization status of the population. Consultative and staff assistance in the conduct of such surveys is provided by the California State Department of Public Health. More are planned. A training course on procedures and techniques for immunization surveys was held in Berkeley, May 23 to 27, 1960, under the auspices of the California State Department of Public Health with the teaching staff provided by the Communicable Disease Center of the Public Health Service in Atlanta, Georgia. Eighteen trainees from health departments in California, Oregon and Arizona were in attendance.

The immunization surveys completed thus far have shown that the least protected segments of the population are those in the lower socio-economic areas and have served to pinpoint so called "soft spots" in the various communities where increased effort is needed for use of the Salk vaccine to prevent the occurrence of outbreaks of poliomyelitis.

The most recent statewide estimates indicate that as of May 1960, 40 per cent of the population of California had maximum protection against poliomyelitis. Eleven per cent had been partially vaccinated (one or two injections) but 49 per cent had had no vaccine at all.

Among California children under five years of age who accounted for 44 per cent of all cases of paralytic poliomyelitis last year there are still 741,700 (or 42 per cent of the children in that age group) who have had fewer than the three or more injections required. Nineteen per cent (335,000) of them have had no vaccine at all.

There is no specific treatment for poliomyelitis. Vaccine is the only effective way to prevent paralytic disease. There is no question of the safety of Salk-type poliomyelitis vaccine. Not a single case of poliomyelitis attributable to the vaccine has appeared in tens of millions of vaccinations given since present standards of safety and manufacture were established. The Salk-type vaccine will for some time be the only widely available immunizing agent against poliomyelitis.

The Problem Nationwide

The number of cases of paralytic poliomyelitis in the United States, in 1959 showed a 54 per cent increase over 1958—5,694 cases in 1959 against 3,697 in 1958. Eighty-two per cent of the 1959 cases occurred in persons who had not been fully vaccinated. Paralytic poliomyelitis was concentrated in poorly immunized lower-income groups living in crowded substandard areas. Nearly half of all paralytic cases were in pre-school-age children. Four and a half million children under five years of age have had no vaccine.

The Salk vaccine continued to prove approximately 90 per cent effective in preventing paralytic poliomyelitis last year. The problem is the familiar one of overcoming personal or community inertia in the use of an effective protective health measure.

In a letter sent April 1, 1960, to executives of national health, welfare and civic organizations, the National Health Council stated, "Any *needless* case of poliomyelitis now, five years after the introduction of the Salk vaccine, is a serious reflection on all of us. Any case that develops among persons who

TABLE 1.—*Paralytic Poliomyelitis in California, 1950-1959*

Year of Onset	Cases Number	Cases Rate Per 100,000 Population	Deaths Number	Deaths Fatality Rate Per 100 Cases
1950	1,496	14.1	107	7.2
1951	2,284	20.6	144	6.3
1952	2,572	22.2	201	7.8
1953	2,240	18.6	125	5.6
1954	2,628	20.9	116	4.4
1955	1,292	9.9	36	2.8
1956	1,283	9.4	53	4.1
1957	283	2.0	19	6.7
1958	232	1.6	13	5.6
1959	408	2.7	20	4.9

Source: State of California Department of Public Health, Records of Bureau of Acute Communicable Diseases.

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*Data and statement prepared by the California Department of Public Health. Publication recommended by the Committee on State Medical Services.

have not been fully vaccinated should be regarded as needless. It probably could have been prevented. For the most part, these cases indicate that we have either failed to overcome unfounded fears or complacency, or neglected to provide the necessary means so that the personal decision to obtain protection could be carried out promptly and without undue hardship."

Action Under Way

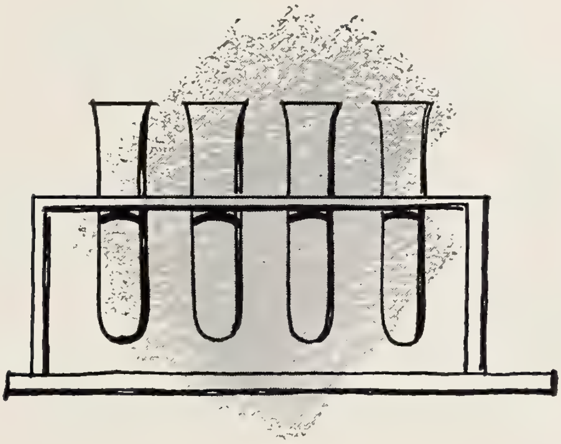
The Public Health Service is spearheading the attack through public and professional information, assistance to State Health Departments, and the development of a rapid method of locating unimmunized groups in any community. The Communicable Disease Center in Atlanta has produced a *Manual for Conducting an Immunization Survey* and has developed a training program in its use. Some 200 communities have completed or have under way such surveys.

The National Advertising Council prosecuted a public information program through the spring and early summer of this year, providing a national backdrop of advertising through television, radio and newspapers. The program was sponsored jointly by the American Medical Association, the National Foundation, and the Public Health Service.

The American Medical Association, the American Academy of Pediatrics and the American Academy of General Practice are again urging their memberships to cooperate in extending poliomyelitis protection.

Both the Metropolitan Life Insurance Company and the Equitable Life Assurance Society are promoting poliomyelitis protection through national publicity and organized efforts through their representatives throughout the country.

The National Health Council is seeking the cooperation of more than 100 national health, welfare and civic organizations urging, on the premise that *organized local community action continues to be the greatest need*, that they communicate with state and local affiliates and encourage them to cooperate, as may be appropriate, with health officers or other health authorities in any effort they may undertake to promote wider use of the Salk vaccine. Cooperation will be needed the National Health Council states, in determining the "soft spots" and in organized efforts to expand the level of poliomyelitis protection.



NEWS & NOTES

NATIONAL · STATE · COUNTY

BUTTE

On July 1, **Dr. Irena A. Heindl** became Butte County Director of Public Health. She was formerly chief of the Bureau of School Health of the Alameda County Health Department.

Dr. Heindl replaced Dr. Arnold Brockmole, who resigned in December 1959.

Dr. Donald Hewitt, Butte County Hospital director and medical superintendent, served as temporary health officer in the interim.

LOS ANGELES

The 1960-1961 officers of the **Los Angeles Radiological Society,** who took office on September 1, 1960, and serve until September of next year are: Dr. Robert Rickenberg, president; Dr. Robert Engle, vice-president; Dr. Denis Adler, treasurer; and Dr. Walter Stilson, secretary. Dr. Putnam Kennedy was elected to the executive committee for a term of three years.

NAPA

A series of six lecture and discussion meetings of two hours each on **neuropsychiatry in general practice** will be held Friday evenings, September 22 and 29, and October 6, 13, 20 and 27 at Napa State Hospital. The course, presented by the medical staff of the hospital and the University of California Department of Continuing Education in Medicine, will cover a wide range of problems commonly encountered in medical practice, and the emphasis will be on dealing with them at the community level. The first hour of each session will be given over to presentation of material, and the second to questions and general discussion.

Although it is the second part of a series of twelve lectures that began last spring, the fall course has been organized so that it may be taken independently.

Further information may be obtained from the Department of Continuing Education, UC Medical Center, San Francisco 22.

SAN FRANCISCO

Announcement of the appointment of **J. Milo Anderson** as executive vice-president of the Presbyterian Medical Center, San Francisco, was made last month by John R. Little, president of the board of trustees. Mr. Anderson, who has been administrator of the University of Rochester (N. Y.) Strong Memorial Hospital for the past five years, takes over his new duties the middle of this month.

GENERAL

Dr. Arthur E. Varden of San Bernardino, has been appointed and **Dr. L. S. Goerke** of Los Angeles, has been reappointed to the State Board of Public Health by Governor Edmund G. Brown. Both terms are for four years.

Dr. Varden succeeds **Dr. Harry E. Henderson** of Santa Barbara, whose term expired. Dr. Henderson has served as a member of the board since 1944.

* * *

The annual meeting of the **Pacific Coast Fertility Society** will be held November 10 to 13 at the Tropicana Hotel, Las Vegas, Nevada. Guest speakers will be Dr. John I. Brewer, professor of obstetrics and gynecology, Northwestern University; Dr. Melvin M. Grumbach, assistant professor of pediatrics, Columbia University; Dr. Robert W. Kistner, associate professor in obstetrics and gynecology, Harvard School of Medicine; and Dr. Somers H. Sturgis, clinical professor of gynecology, Harvard School of Medicine.

Further information may be obtained from Anah C. Wineberg, M.D., 3120 Webster Street, Oakland 9.

* * *

The ninth annual **Cancer Seminar** of the Arizona division of the American Cancer Society will be held January 12 to 14, 1961, at Tidelands Motor Inn, Tucson. The announcement of the meeting said it would be devoted to the various aspects of chemotherapy, virology, endocrinology, environmental factors, etc., as they relate to tumor formation or the therapy for tumors.

* * *

The Biennial **Western Conference on Anesthesiology** will be held May 16, 17, 18, 1961, at the Sheraton Hotel, Portland, Oregon. Further information may be obtained from T. F. Brinton, M.D., secretary-treasurer, Sacred Heart General Hospital, Eugene, Oregon.

POSTGRADUATE

EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Elements of Psychiatry in Clinical Practice. Thursdays, September 17 through June 11. (2 Conferences at Lake Arrowhead, plus weekly evening sessions.) Ninety-two hours. Fee: $150.00.

Below-Knee Prosthetics. Monday through Friday, September 19 through 23. Enrollment limited to 20. Fee: $125.00.

Psychotherapeutic Methods for General Practitioners. Mondays, October 3 through March 27. Seventy-two hours. Fee: $75.00.

Neuropathology. Tuesdays and Thursdays, October 18 through December 6. Twenty-eight hours. Fee: $105.00.

Below-Knee Prosthetics. Monday through Friday, October 31 through November 4. Enrollment limited to 20. Fee: $125.00.

Proctology—Lecture and Surgery Demonstration. Wednesday, November 30. Nine hours. Fee: $40.00.

Diagnosis and Treatment of Anemia. Friday and Saturday, December 9 and 10. Twelve hours. Fee: $40.00.

Below-Knee Prosthetics. Monday through Friday, December 12 through 16. Enrollment limited to 20. Fee: $125.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 9 through 22. Twenty-four hours. Fee: $125.00.

Bedside Clinics (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: $50.00.

Below-Knee Prosthetics. Monday through Friday, January 23 through 27. Enrollment limited to 20. Fee: $125.00.

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $15.00 (includes one lunch and one dinner).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 13 through May 4. Thirty-two hours. Fee: $150.00.

Low Back Pain. Friday and Saturday, May 12 and 13. Twelve hours.*

For Nurses and Ancillary Personnel

Thirteen courses will be offered during the summer and fall for nurses and other ancillary personnel.

Contact: Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Radiological Physics (32 Tuesday evenings). September 20 through May 2. For residents. Fee: $100.00.

Psychotherapy in General Practice. Wednesday evenings, September 21 through December 7. Fee: $25.00.

Neuropsychiatry in General Practice (Napa State Hospital). Thursday evenings, September 22 through October 27. Fee: $5.00.

Advances in Surgical Anatomy, Normal Anatomy and Histology of the Eye. Thursday and Friday, September 22 and 23. Fourteen hours. Fee: $50.00.

Internal Medicine. Tuesday through Saturday, September 27 through October 1. Thirty-five hours.*

Tonography. Saturday, October 2. Seven hours. Fee: $25.00.

X-raying by Means of Words. Thursday evenings. October 6 through January 12. Fee: $5.00.

Symposium on Surgical Care of the Acutely Injured Patient, Franklin Hospital. Saturday and Sunday, October 8 and 9. Fourteen hours. Fee: $25.00.

Environmental Dermatosis Due to Contact and Physical Agents. Friday and Saturday. October 14 and 15. Fourteen hours. Fee: $40.00.

Advances in Ophthalmic and General Pathology. Thursday through Saturday, November 3 through 5. Twenty-one hours.*

Symposium on Ear-Nose-Throat Problems in Children, Children's Hospital. Saturday, November 5. Seven hours. Fee: $12.50.

Psychological Problems in Medical Practice. Friday through Sunday, November 11 through 13. Twenty-one hours. Fee: $10.00.

Retinal Detachment Surgery. Thursday through Saturday, December 1 through 3. Twenty-one hours.*

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Civilization and Man: The Control of the Mind. Sat. urday through Monday, January 28 through January 30. Twenty-one hours. Fee: $25.00.

A Course in Pediatrics. Saturday through Monday, February 11 through 13. Twenty-one hours.*

Symposium on Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For Nurses and Ancillary Personnel

Eleven courses will be offered during the fall and winter for nurses and other ancillary personnel.

Contact: Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Each Monday and Wednesday, 7 to 8:30 p.m.

Clinical Problems of Ophthalmology, all-day conference. 9 a.m., Saturday, September 24. Open to visiting physicians. Cases for examination in Eye Clinic.

Conference on Cataracts (limited to physicians specializing in Eye or EENT). Wednesday through Friday, November 9 through 11. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Intensive Review of Internal Medicine. September 26 through October 7. Fee: $65.00.

Pediatric Therapy. Monday, October 10. Fee: $25.00.

Hormones and Electrolytes. Thursday and Friday, October 13 and 14.*

Bedside Clinics. Thursdays, October 6 through January 12. Fee: $65.00.

Recent Advances in Medicine. Thursday and Friday, November 17 and 18.*

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*Fee to be announced.

Nuclear Medicine:
Part I, January. Fee: $50.00.
Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Clinical Hematology. Saturday and Sunday, February 25 and 26.*

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations). Monday and Wednesday, September 13 through June 9. 324 hours. Fee: $250.00.

Upper and Lower Extremities. Monday and Wednesday, September 14 through December 21. 140 hours. Fee: $125.00.

Thorax, Abdomen, Pelvis. Monday and Wednesday, January 4 through April 12. 121 hours. Fee: $125.00.

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only). Wednesdays, September 13 through June 9. Eighty-two hours. Fee: $100.00.

Upper and Lower Extremities. Wednesdays, September 14 through December 21. Thirty hours. Fee: $50.00.

Thorax, Abdomen, Pelvis. Wednesdays, January 4 through April 12. Twenty-eight hours. Fee: $50.00.

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Surgical Pathology. Wednesdays, September 13 through June 9. One hundred eight hours. Fee: $100.00.

Surgical Physiology. Thursdays, September 13 through June 9. Sixty-four hours. Fee: $75.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE CIRCUIT COURSES

For **Dunsmuir, Redding, Chico,** and **Marysville** in cooperation with Stanford University School of Medicine. Begins week of September 19, 1960.

For **Eureka, Ukiah, Napa** and **Auburn** in cooperation with University of California, San Francisco School of Medicine. Begins week of September 19, 1960.

POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 13 and 14, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* Malcolm J. Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine. Lake Tahoe. Location and regional chairman to be announced.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

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*Fee to be announced.

Medical Dates Bulletin

SEPTEMBER MEETINGS

Santa Barbara County Heart Association Physicians Symposium. September 17, 9:00 a.m. to 5:00 p.m., Biltmore Hotel, Santa Barbara. *Contact:* E. J. Hannon, executive director, 18 La Arcada Court, Santa Barbara.

California Society of Internal Medicine Annual Meeting, Yosemite. September 23, 24 and 25. *Contact:* Barbara E. Oulton, executive secretary, 350 Post St., San Francisco 8.

Washington State Medical Association Annual Convention. September 25 through 28. Olympic Hotel, Seattle, Washington. *Contact:* R. W. Neill, executive secretary, 1309 7th Avenue, Seattle, Washington.

Southern California Society of Gastroenterology Panel Discussion "Ulcerative Colitis." September 27. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

Pan-Pacific Surgical Association 8th Intensive Surgical Congress, embracing all Surgical Specialties. September 27 through October 5. Honolulu, Hawaii. *Contact:* F. J. Pinkerton, M.D., director general, Suite 230, Alexander Young Building, Honolulu 13.

OCTOBER MEETINGS

American Society of Plastic and Reconstructive Surgery. Statler Hotel, Los Angeles, October 2 through 7. *Contact:* Thomas R. Broadbent, M.D., secretary, 508 E. S. Temple, Salt Lake City.

San Diego County Heart Association 10th Annual Symposium on Heart Disease. October 3 and 4. El Cortez Hotel. *Contact:* O. Martin Avison, 3545 Fourth Avenue, San Diego 3.

American Association for the Surgery of Trauma. Coronado Hotel, San Diego. October 5 through 7. *Contact:* William T. Fitts, Jr., M.D., secretary, 3400 Spruce St., Philadelphia 4.

Los Angeles County Heart Association 30th Annual Professional Symposium on Cardiovascular Diseases. October 5 and 6. Beverly Hilton Hotel, Beverly Hills. *Contact:* Los Angeles County Heart Association, 2405 W. 8th St., Los Angeles 57.

San Francisco Heart Association 30th Annual Postgraduate Symposium on Heart Disease. October 5 through 7. St. Francis Hotel, San Francisco. *Contact:* Mr. Lawrence I. Kramer, Jr., executive director, 259 Geary St., San Francisco 2.

Western Industrial Medical Association combined Meeting with 4th Western Industrial Health Conference. October 7 through 9. Jack Tar Hotel, San Francisco. *Contact:* Verne G. Ghormley, M.D., president, 3032 Tulare Street, Fresno 21.

Metabolic Errors, Genetics and Mental Disease, Second Invitational Conference. October 8, Napa State Hospital, Napa. *Contact:* David Wardell, M.D., chief of professional education, Sonoma State Hospital, Eldridge, Calif.

American College of Surgeons, 46th Annual Clinical Congress, San Francisco. October 10 to 14. *Contact:* William E. Adams, M.D., secretary, 40 E. Erie St., Chicago 11, or Leon Goldman, M.D., arrangements chairman, professor and chairman, Department of Surgery, University of California Medical Center, San Francisco 22.

American Cancer Society California Division Annual Meeting. October 13 through 15. Villa Hotel, San Mateo. *Contact:* Jane N. Lounsbury, assistant director, Field Services, 467 O'Farrell, San Francisco.

Kaiser Foundation Hospitals in Northern California Fourth Annual Symposium on Human Genetics. October 14 and 15. Fairmont Hotel, San Francisco. *Contact:* Martin A. Shearn, M.D., Director of Medical Education, 280 West MacArthur Blvd., Oakland.

California Academy of General Practice 12th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

Western Orthopedic Association Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. *Contact:* Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

Association of State and Territorial Health Officers. Jack Tar Hotel, San Francisco. October 26 through 28. *Contact:* A. C. Offutt, M.D., secretary-treasurer, 1330 W. Michigan Street, Indianapolis 7.

St. Jude Hospital—Fullerton 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. *Contact:* B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

American School Health Association, San Francisco. October 30 through November 4. *Contact:* A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

American Public Health Association, San Francisco. October 31 through November 4. *Contact:* Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

NOVEMBER MEETINGS

San Diego County General Hospital 14th Annual Postgraduate Assembly. Wednesday and Thursday, November 2 and 3. San Diego County General Hospital, North End of Front Street, San Diego. *Contact:* Frank H. Carter, M.D., chairman, 2001 Fourth Avenue, San Diego 1.

American Society of Tropical Medicine and Hygiene. Biltmore Hotel, Los Angeles. November 2 through 5. *Contact:* Rolla B. Hill, M.D., executive secretary, 3575 St. Gaudens Rd., Miami 33, Florida.

Los Angeles Pediatric Society Annual Brennemann Lectures. November 9, 4 to 10 p.m., and November 10, 9 a.m. to 7 p.m. Ambassador Hotel, Los Angeles. *Contact:* Neil N. Litman, M.D., vice-president, 5830 Overhill Drive, Los Angeles 43.

San Diego Chapter of the California Academy of General Practice Scientific Symposium. November 10, 11 and 12. Hotel Riviera, Las Vegas, Nevada. *Contact:* George H. Burkhart, M.D., chairman, program committee, 514 3rd Ave., Chula Vista.

Pacific Coast Fertility Society. November 10 through 13, Hotel Tropicana, Las Vegas, Nev. *Contact:* Anah C. Wineberg, M.D., secretary-treasurer, 3120 Webster Street, Oakland.

California Sanatorium Association Annual Business, Clinical and Administrative Session. November 12. Olive View Hospital, Olive View, Calif. *Contact:* J. P. Myles Black, M.D., Olive View Hospital, Olive View, Calif.

California Conference of Local Health Officers Fall Meeting, November 14 and 15, Oakland, Calif. *Contact:* Donald S. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

AMERICAN COLLEGE OF PHYSICIANS Southern California Regional Annual Basic Science Lectureship. November 18, California Club, Los Angeles. Dinner and cocktails, 6:30 p.m. Speaker: Melvin Calvin, Ph.D., professor of chemistry, University of California, Berkeley. Subject: "Origins of Life." Members and invited guests. *Contact:* George C. Griffith, M.D., governor ACP, P.O. Box 25, 1200 N. State Street, Los Angeles 33. CApitol 5-3131, Ext. 7-1543.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

DECEMBER MEETINGS

AMERICAN COLLEGE OF CHEST PHYSICIANS Sixth Annual Postgraduate Course on Diseases of the Chest. December 5 through 9, 9 to 5 daily, Jack Tar Hotel, San Francisco. *Contact:* Mr. Murray Kornfeld, executive director, 112 East Chestnut Street, Chicago 11, Ill.

1961 MEETINGS

LONG BEACH HEART, CANCER AND TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 1:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. Abstracts (300 words) of papers for consideration of presentation at the meeting should be sent in triplicate before November 1 to Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

OBSTETRICAL AND GYNECOLOGICAL ASSEMBLY OF SOUTHERN CALIFORNIA, 16th Annual Mid-Winter Clinical Assembly. Ambassador Hotel, Los Angeles, February 13 through 17. *Contact:* Dee Davis, executive secretary, 5478 Wilshire Blvd., Los Angeles 36, WEbster 4-1551.

CALIFORNIA TUBERCULOSIS AND HEALTH ASSOCIATION, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY. "Problems and Pitfalls in. Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

SOUTHWESTERN PEDIATRIC SOCIETY Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

COLLEGE OF MEDICAL EVANGELISTS Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

INDUSTRIAL MEDICAL ASSOCIATION. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

THE PHYSICIAN'S *Bookshelf*

COMMUNICABLE AND INFECTIOUS DISEASES—Diagnosis, Prevention, Treatment—4th Edition—Franklin H. Top, A.B., M.D., M.P.H., F.A.C.P., F.A.A.P., F.A.P.H.A., Professor and Head, Department of Hygiene and Preventive Medicine, State University of Iowa, Iowa City, Iowa; Director, University Dept. of Health, and Director, Institute of Agricultural Medicine, State University of Iowa; Consulting Director, State (of Iowa) Hygienic Laboratories; and Consultant, Communicable Disease Center, U. S. Public Health Service, Atlanta, Ga.; and Collaborators. The C. V. Mosby Company, St. Louis, Mo., 1960. 812 pages, with 122 figures and 15 color plates, $20.00.

This is the fourth edition of a book which first appeared in 1941 and has become well known as a handy reference for persons whose professional duties necessitate contact with a wide variety of communicable or infectious diseases. It is a comprehensive volume of over 800 pages with numerous up-to-date references. New chapters on acute respiratory infections, enteroviruses, and staphylococcal infections have been added and those on chemotherapy and antibiotics, management of communicable diseases in the hospital and at home, the bacterial pneumonias, influenza, infantile diarrhea, gonorrhea, the leptospiroses and rickettsial diseases have been completely rewritten. Remaining chapters have been revised. Some twenty-one collaborators are contributors in their special fields.

This handbook—grown to a full sized text—will be useful to most general practitioners, pediatricians, internists and medical students.

WM. DEAMER, M.D.

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CARDIAC AUSCULTATION — Including Audio-Visual Principles. Second Revised Enlarged Edition—J. Scott Butterworth, M.D., Associate Professor of Medicine, New York University Post-Graduate Medical School; Maurice R. Chassin, M.D., Associate Professor of Clinical Medicine, New York University Post-Graduate Medical School; Robert McGrath, M.D., Associate Professor of Clinical Medicine, New York University Post-Graduate Medical School; and Edmund H. Reppert, M.D., Assistant Professor of Clinical Medicine, New York University Post-Graduate Medical School. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, New York, 1960. 102 pages, $6.25.

This second edition has been enlarged in the frontal plane only (it is 1 inch wider and taller), while the sagittal plane has actually been decreased by 9 pages. The material is similar to that of the first edition with some additions and revisions to bring it reasonably up to date. There is a brief description of the Cambridge equipment employed as audiovisual aids in the teaching of auscultation. A brief review of the physical principles of sound is followed by presentations of factors influencing the perception of heart sounds, the origin of heart sounds, and the nature and properties of murmurs. The remainder of the book is devoted to a systematic description of sounds and murmurs in various clinical conditions presented almost in an outline form. The illustrations are suitable and have been improved over the previous edition by including with the phonocardiogram a reference tracing for timing purposes.

A few minor criticisms may be made. While 17-inch oscilloscopes and tape recordings are helpful in teaching auscultation, they are expensive. A simple, direct writing phonocardiograph such as the Elema may prove very valuable for small groups of students and provides the additional advantage of having a phonocardiogram immediately available for study and adding to the patient's medical record. The attempt to separate semilunar and AV valve regurgitation into insufficiency—"the valves do not close completely" and incompetence—"it results from dilatation of the valve rather than from intrinsic disease of the valve cusps" is awkward and of no value whatsoever as far as the mechanism of production of the regurgitant murmur is concerned. Fortunately the presentation is not further confused by the use of the additional terms, "organic" and "relative" stenosis. Brevity often leads to omission of detail resulting in inaccurate description. Primary pulmonary hypertension, for example, is accompanied just as frequently by a systolic ejection sound and a prominent atrial gallop as by the Graham Steell murmur and the occasional murmur of tricuspid insufficiency as described on page 92. Diastolic murmurs in ventricular septal defects are described on page 88 as being of the same variety and due to similar factors as those heard in atrial septal defects. Such an inaccurate statement is inexcusable. While a Graham Steell murmur may occur in both conditions when pulmonary hypertension is present, the tricuspid flow murmur of an atrial septal defect heard along the lower left sternal border is quite different in character and origin than the mitral flow murmur heard at the apex in a ventricular septal defect.

This brief review of cardiac auscultation cannot be enthusiastically recommended to either students or physicians when there are at least four other superior comprehensive monographs on phonocardiography and auscultation available today.

H. N. HULTGREN, M.D.

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ANTIBIOTICS ANNUAL—1959-1960. Proceedings of the Seventh Annual Symposium on Antibiotics—Chairman of the Symposium, Henry Welch, Ph.D.; under the Editorial Direction of Felix Marti-Ibanez; and sponsored by Antibiotics and Chemotherapy and Antibiotic Medicine and Clinical Therapy, November 4, 5, and 6, 1959, Washington, D.C. Antibiotica, Inc., 30 East 60th Street, New York 22, N. Y., 1960. 1034 pages, $15.00.

The annual account of the doings of the Symposium on Antibiotics which is held each fall in Washington, D. C., under the chairmanship of Henry Welch is mandatory reading for everyone who is specifically interested in infectious diseases and antimicrobial therapy. No known critiques are applied to the selection of papers to be read, so that there are wide swings between the most trivial or even erroneous observations to some that are extremely important. The practicing physician is advised to obtain his information about what is contained in this massive book from his colleagues who have special knowledge in the field.

LOWELL A. RANTZ, M.D.

MASSAGE, MANIPULATION AND TRACTION—Edited by Sidney Licht, M.D., Honorary Member, British Association of Physical Medicine, Danish Society of Physical Medicine, and the French National Society of Physical Medicine, Elizabeth Licht, Publisher, 360 Fountain Street, New Haven, Conn., 1960. 275 pages, $10.00.

This is a continuation of the series of books by this editor, constituting Volume V of a Physical Medicine Library. Three aspects are discussed in detail, consisting of massage, manipulation, and traction. These three modalities are used by cultists and very little is taught to the physician regarding their judicious application.

Besides the classical massage technique of stroking, kneading, and percussion, several new techniques, used mainly in Europe, are presented. An entirely new form of massage, called "connective tissue massage," is presented for the first time in American literature. It is used for the relief of pain through the mediation of pain reflex phenomena. This reviewer is inclined to agree with the publisher's statement that "some massage practices are so new that by the time you read this book they may have been abandoned." However, it is interesting to know what others are doing elsewhere. Another interesting form of massage treatment is the term "syncardial massage," in which pneumatic cuffs are attached to the calf group and inflated in a rhythm to correspond with the pulse wave coming from the heart. The theory being that as the pulse wave travels down the artery it is given an extra pumping action and in this way provides greater arterial pressure for use in arteriosclerotic conditions in the lower extremities. The theory appears to be sound but no laboratory evidence is cited of its clinical value.

Under manipulation, maneuvers are shown for manipulating both the spine and lower extremities. This aspect is written by English physicians and this reviewer is not sure of their accepted status even in England. Certainly, one cannot agree with the broad statements of some of the chapters, e.g., "It is possible by these means to reduce a nuclear protrusion."

The section on traction shows all of the routine methods for giving traction both to the cervical and spinal areas. Actually, the chapters are a resume of literature on the use of traction in clinical conditions. The great disparity between various publishers of articles is emphasized and this reviewer is left with the impression that each clinician will have to form his own opinion and proceed with it.

This reviewer agrees with the statement of the editor that this material was presented in the belief that the more that is published about questionable procedures the sooner we may learn what is worth continued usage. Certainly, there are indications for massage and manipulation and traction, and those men interested in orthopedics and physical medicine could read this book with profit.

S. Malvern Dorinson, M.D.

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PSYCHOANALYSIS OF TODAY—S. Nacht. American Adaptation Prepared by Ruth Emma Roman. Grune & Stratton, 381 Fourth Avenue, New York 16, New York, 1959. 228 pages, $5.75.

Psychoanalysis of Today, according to the translator, Ruth E. Roman, is a condensation of a collection of studies published under the direction of Dr. S. Nacht by the "Bibliotheque De L'Institut de Psychoanalyse de Paris."

The first chapter, by S. Nacht and S. Lebovici, deals with the indications and contraindications for psychoanalysis of adults. Quite appropriately, careful weighing of each case is urged with psychoanalysis recommended only if it can definitely be expected to give better results than a simpler form of therapy and if it is felt that the end result will justify so protracted a treatment. It is emphasized that to advise a patient for or against psychoanalysis is a serious decision because it may shape the future life of the person as well as that of his family. Clinical diagnosis is not the only factor on which a decision must be based. The strength of the instinctual forces and of the ego are important elements to be considered in making the decision.

In a chapter "Clinical Analysis" by M. Bouvet, the contributions of psychoanalysis to clinical practice are comprehensively reviewed. Despite the attempt of the author to be as clinical as possible and to avoid technical psychoanalytic formulations, the psychopathologic and psychodynamic formulations, and especially the description of the structure of the ego and its object relationships in various types of psychiatric disorders, are quite complex. They will not be understood by the average physician.

S. Nacht in a chapter on "Psychoanalytic Therapy" gives an excellent, clear summary of the history, development, principles, and technique of psychoanalysis.

The chapter on "Psychoanalysis of Children" by S. Lebovici, et al., is written in such technical psychoanalytic language (and concept) as to be practically unintelligible to the pediatrician and general practitioner. Nor will it be very meaningful to the child psychiatrist who has not had the benefit of psychoanalytic training. The authors do, however, point out the differences in the nature and manifestations of psychiatric problems in children, as compared to adults.

R. Held in a chapter entitled "Psychoanalysis and Medicine" exemplifies by numerous brief case summaries, the variety of attitudes and relationships that exist between the psychoanalyst and his medical colleagues—varying from the hostile and skeptical to the friendly and accepting. He describes the wide variation in cases that are referred and the problems that arise from the methods of referral, and makes a good point for the importance of the analyst being a physician, and the physician being in part a psychiatrist.

Other chapters deal with, but do not answer, questions concerning the origin of deviations in behavior, the importance of constitutional and environmental factors as observed in infant development and the relationship of psychoanalysis to sociology. P. C. Racamier has written an excellent review of the psychoanalytic therapy of the psychoses.

Like so many books that consist of a collection of individual contributions, there is considerable unevenness in style, clarity and worthwhileness from chapter to chapter. The book will not interest the general practitioner and will appeal to only selected psychiatrists and psychoanalysts.

Norman Q. Brill, M.D.

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CIBA FOUNDATION STUDY GROUP NO. 3—CANCER OF THE CERVIX (Diagnosis of Early Forms), in honour of Prof. Dr. C. Kaufmann. Editors for the Ciba Foundation—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A. Little, Brown and Company, Boston, Mass., 1959. 114 pages, with 27 illustrations, $2.50.

This little book is a collection of seven papers presented at a one-day conference held in London in May 1959 under the auspices of the Ciba Foundation. Various aspects, both morphological and chemical, of the problem of early diagnosis of cervical cancer are presented, and each essay is followed by a verbatim report of the discussion offered by members of the study group. Twenty-three participants are listed, including two from the United States. Since it is impossible to present a coherent summary of such diverse material in a few sentences, it is urged that every pathologist and gynecologist with an active interest in cervical cancer read the book himself. Some of the personal exchanges of viewpoints in the discussion sections are especially fascinating, and in themselves are well worth the very modest investment demanded by the publisher.

C. E. McLennan, M.D.

LIFESPAN OF ANIMALS, THE—Ciba Foundation Colloquia on Ageing, Volume 5. Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A. Little, Brown and Company, Boston, Massachusetts, 1959. 324 pages, with a Cumulative Index of 46 pages—Indexes to Volumes 1-5, $9.50.

This is the fifth volume of a series of studies begun in 1954. It was prepared from papers delivered at an International Colloquium held in April, 1959. The others are as follows: Volume I, "General Aspects"; Volume II, "Aging in Transient Tissues"; Volume III, "Methodology of the Study of Aging"; Volume IV, "Water and Electrolyte Metabolism in Relation to Age and Sex."

There is appended a cumulative author index and a cumulative subject index.

This is an addition to a very valuable series on basic aspects of the nature of the aging process in the animal kingdom. Such a study is an immense and relatively untouched field that is difficult of research because of its very nature. In order to study it one has to keep animals until they become old. This is a difficult, expensive, painstaking process, which requires more than ordinary patience, not to mention skill. The clinician practicing geriatrics as well as the student of gerontology cannot fail to have a better understanding of this complicated subject and emergent interest by the careful perusal of this collection of reports.

T. Eric Reynolds, M.D.

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MEDICAL CARE OF THE ADOLESCENT—A Textbook Concerning the Medical Care and Understanding of Adolescents Themselves and of their Disorders—J. Roswell Gallagher, M.D., Chief of the Adolescent Unit, The Children's Hospital Medical Center, Boston, and Lecturer on Pediatrics, Harvard Medical School; and the Staff Physicians of the Adolescent Unit. Appleton-Century-Crofts, Inc., 35 West 32nd Street, New York 1, N. Y., 1960. 369 pages, $10.00.

Pioneers are doubly fortunate. They deserve and receive credit for their vision and initiative in exploring new fields. And they reap richly of the hitherto ungathered harvest in the field. Dr. Gallagher's book on the medical care of adolescence is the fruit of such a harvest.

The field of adolescent medicine is widely covered, ranging, as the author states, through "such matters as a method of conducting their history taking and physical examination to comments on their personality characteristics and emotional needs, and to the management and peculiarities of such of their ailments as epilepsy, acne, epiphysitis, dysmenorrhea, athletic injuries, scholastic failure, diabetes, growth problems, heart disease, and emotional and behavioral difficulties." The actual chapter titles indicate both the breadth and precision of coverage: Comments on the adolescent; the office visit; growth and development during adolescence; the management of cardiac problems and the evaluation of murmurs; congenital heart disease, hypertension, and cardiovascular fitness; diabetes; enuresis; fatigue and fitness; gynecomastia and hyperthelia; obesity; pancreatitis; the thyroid; ulcerative colitis; undescended testis; acne and eczema; the gynecologic examination of adolescents and their normal menstruation; amenorrhea; menorrhagia and metropathia hemorrhagica; premenstrual tension and dysmenorrhea; vaginitis; epilepsy; problems relating to vision; posture and certain common orthopedic disorders; athletic injuries; scholastic failure; specific language disability (dyslexia); the management of emotional problems; sex, homesickness, rebellion, anxiety, and delinquency; mortality, morbidity, and accidents.

It will be noted from the contents that problems related to learning and athletics receive an emphasis which is appropriate to their importance in adolescence. The information collected in these sections has heretofore been widely scattered and difficult of access.

The content of the chapters reflects partly the experience of the Staff of the Adolescent Unit of Children's Hospital, Boston; partly a review of relevant literature. Sometimes recommendations for treatment seem a little arbitrary, as in considerations of when to treat tall girls or short boys, or in some of the hormonal suggestions for the treatment of dysmenorrhea. But, since the bibliography is so full, with references attached to each chapter and collected in a comprehensive list at the end of the book, anyone can find his way easily to basic work in connection with a specific problem. The subject and author indices also help in such a search.

Actually, this book does a double job of pioneering. Besides marshalling medical knowledge not previously presented in the context of the age range involved, "Medical Care of the Adolescent" pioneers in its consistent integration of psychologic with physical considerations. No condition is described, nor treatment suggested, without giving thought to the psychologic implications of the situation and their meaning for the physician-patient relation.

In the preface, Dr. Gallagher mentions as the second chief purpose of the book: "To emphasize the importance of taking adolescents themselves, their characteristics, their hopes and fears into account, and of treating them, not just their illnesses." The successful achievement of this purpose is so complete and useful to the physician that the influence of a benign and wise psychiatrist is apparent throughout. The psychiatrist, of course, is Dr. H. I. Harris, Dr. Gallagher's long time co-worker and his co-author of another book: "Emotional Problems of Adolescence." Although Dr. Harris is mentioned only in connection with this latter reference, one guesses that he presided over many a medical visit and many a chapter draft.

Altogether the book is a unique, stimulating and reassuring guide to anyone interested in caring for adolescents and their problems.

Leona M. Bayer, M.D.

* * *

PAIN AND ITCH—NERVOUS MECHANISMS—Ciba Foundation Study Group No. 1—(In honour of Prof. Med. Dr. Y. Zotterman, M.D., R.V.O.). Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A. Little, Brown and Company, 34 Beacon Street, Boston 6, Massachusetts, 1959. 120 pages, with 41 illustrations, $2.50.

This little volume contains papers delivered at the first of a series of Ciba Foundation Study Groups. Professor Y. Zotterman of the department of physiology, Kungl. Veterinarkogskolen, Stockholm, was the guest of honor at the meeting. He, and other workers in the fields of neuroanatomy and neurophysiology presented reviews of work dealing specifically with the nervous mechanisms mediating the sensations of itch and pain. Most of the material presented consists of fairly detailed accounts of laboratory experiments on nerves and nerve fiber preparations. The papers are well illustrated with tracings of spike potentials obtained under various experimental circumstances. Peripheral and central nervous mechanisms of pain perception are discussed, primarily on the experimental level. Of more immediate interest to the practitioner is a paper by Arthur and Shelly in which is presented a summary of current information on the Peripheral Mechanism of Itch in Man. The group discussions following each paper are quite stimulating and additional interesting material is given in the general discussion which is the last chapter. This book is intended primarily for those who have a special interest in experimental or clinical neurophysiology.

Donald H. Paulson, M.D.

TRIUMPH OF SURGERY, THE—Jurgen Thorwald. Translated by Richard and Clara Winston. Pantheon Books, Inc., 333 Sixth Avenue, New York 14, N. Y., 1960. 454 pages, $6.50.

This fascinating and vivid account of the main features in the history of surgery during the 19th and early part of the 20th century, makes it enjoyable reading, both to the layman and the physician. The valuable physiological and pathological background is given along with the struggles and frustrations of our pioneers.

Speaking through a figurative Doctor Hartmann, as in his earlier "The Century of the Surgeon," the author continues his familiarity with these characters, thereby making the presentation of authentic material most pleasant.

The narrative consumes some 430 pages which would have been considerably lengthened if all the episodes like localization of brain tumors, and newer discoveries in thoracic and cardiac surgery had been included. These, however, will come under contemporary history and are well known.

The rarely recorded and tragic story of topical, local and spinal anesthesia, the tragedy of the Crown Prince Frederick the III's last illness and the final solution of thyroid and gall bladder surgery illustrate some of the intriguing accounts.

The author has again presented a readable authentic and vivid account of surgery that will fascinate, not only the older physicians, but offers the student and the young physician many stimulating examples.

F. L. Reichert, M.D.

* * *

VIRUS VIRULENCE AND PATHOGENICITY—Ciba Foundation Study Group No. 4.—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc., editors for Ciba Foundation. Little, Brown and Company, Boston, 1960. 114 pages, 13 illustrations, $2.50.

For many physicians the justification for studying viral infection is illness or death resulting from such infection in man. These phenomena surely represent some aspects of viral virulence and pathogenicity, but in broader terms virulence may be described as "an epiphenomenon of the processes by which the virus survives in nature in relation to the full totality of the environment." A group of distinguished British, Dutch and American investigators met in June 1959 to discuss the complexities of pathogenicity and virulence, with particular reference to influenza viruses. Under the chairmanship of Sir MacFarlance Burnet this group attempted to define what interactions between parasite and host were responsible for manifestations of pathogenicity and to what extent the virulence of the virus, or the susceptibility of the host could be defined quantitatively. The stimulating discussions are reproduced verbatim. While some of the technical points in the debate are of principal interest to medical virologists the general physician will also find much elegant reasoning and many illuminating facts.

Ernest Jawetz, M.D.

* * *

CHRISTOPHER'S TEXTBOOK OF SURGERY—Seventh Edition—Edited by Loyal Davis, M.D., Chairman of the Dept. of Surgery, Northwestern University Medical School. W. B. Saunders Company, Philadelphia, 1960. 1551 pages, $17.00.

This is a seventh edition of a standard Textbook of Surgery, written initially by Christopher and edited now by Loyal Davis. In the reviewer's opinion there are three excellent Textbooks of Surgery at the present time. These are: Moseley's Textbook of Surgery; Allen, Harkins, Moyer, and Rhoads' Surgery—Principles and Practice, and Christopher's Textbook of Surgery. All of these textbooks have been revised within the past year and all are excellent texts.

The Moseley text has the advantage of being somewhat shorter and having better illustrations than the other two. It is a little easier for a student in the first stages of surgery to acquire the basic principles of surgery. However, it is not nearly so detailed nor as applicable in the long run as Christopher's Textbook of Surgery or the textbook by Allen, Harkins, Moyer and Rhoads on Surgery—Principles and Practice.

Christopher's Textbook of Surgery covers in a very systematic way all of the aspects of general surgery ranging from infections, fluid and electrolyte problems, shock, trauma, to the latest advances in the field of cardiovascular surgery. I think it is an excellent text and one that can be recommended strongly to a student, particularly if he is interested in the long run in going into the field of surgery. It is written in an easily comprehensible style. Despite the fact that there is extensive multiple authorship, the overlap of material presented is not too great.

The only criticism that one can level at the book is its somewhat formidable length. However, the amount of material covered is such that it would be hard to do justice to the material in a shorter volume. This book is recommended strongly to students interested in general surgery.

Victor Richards, M.D.

* * *

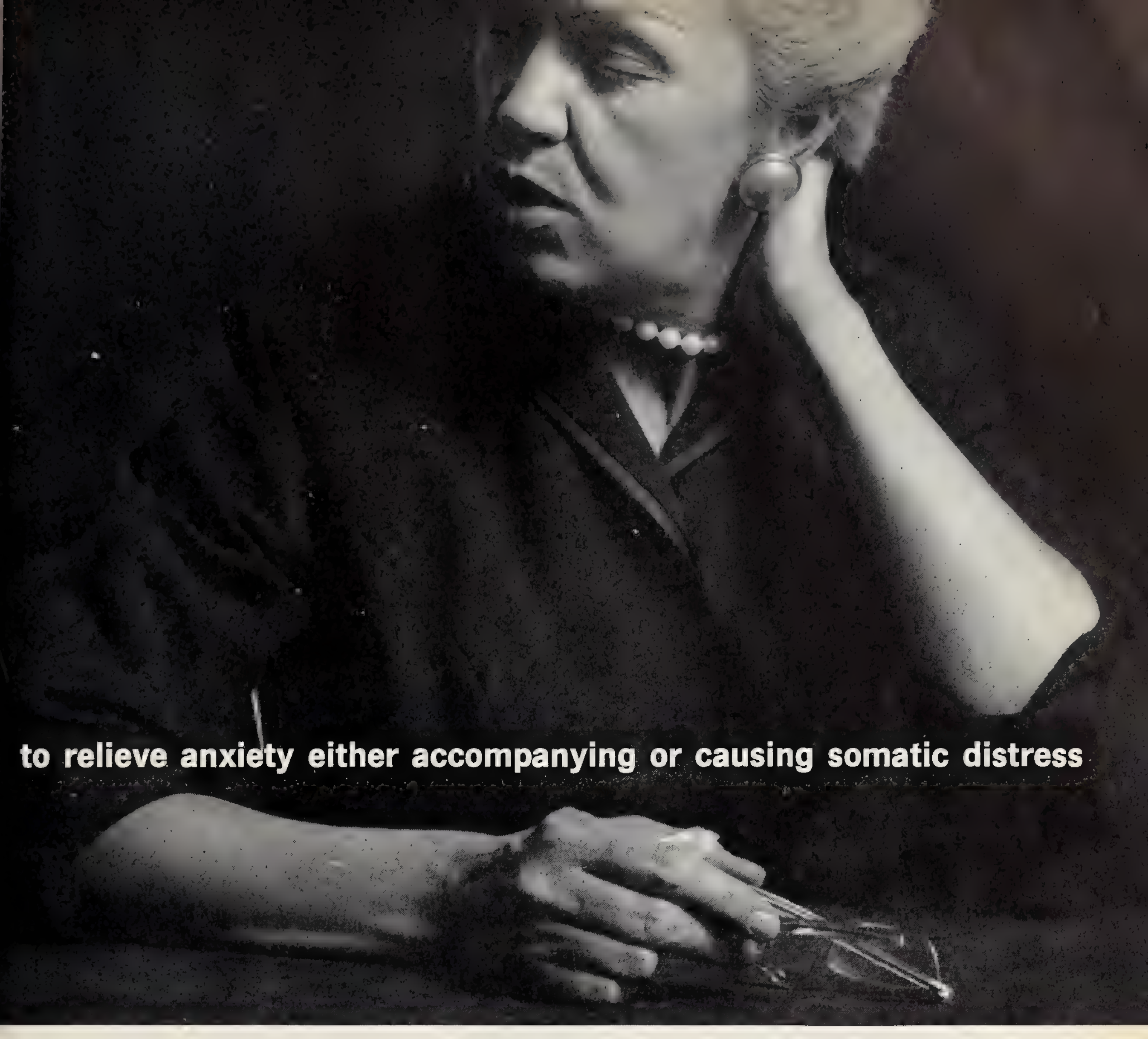
EXPERIMENTAL SURGERY—Including Surgical Physiology—Fourth Edition—By J. Markowitz, M.B.E., M.B. (Tor.), Ph.D., M.S. in Exp. Surg. (Minn.); Professor of Physiology, University of Toronto; Visiting Professor of Physiology, Ontario Veterinary College, Guelph, Ont.; J. Archibald, D.V.M. M.V.Sc., Dr. Med. Vet. (Giessen), M.R.C.V.S., Professor and Head of the Division of Small Animal Medicine and Surgery, Ontario Veterinary College, Guelph, Ont.; and H. G. Downie, D.V.M., M.S. (Cornell) M.V.Sc., Professor and Head, Department of Physiological Sciences Ontario Veterinary College, Guelph, Ont. The Williams & Wilkins Company, Baltimore 2, Md., 1959. 931 pages, $12.50.

Experimental Surgery by Markowitz has been truly a classic in the field. This book represents the fourth edition and it has been completely revised and improved. It contains a wealth of information which should be available to every surgical resident and to every surgeon interested in research. It will save one a great deal of time and effort in familiarizing himself with the previous experimental surgery which has been done in an area, if he will avail himself of the contents of this book and also the excellent reference lists which follow each section.

The present book has been brought up to date and includes fairly adequate discussions of such problems as cardiovascular surgery, hypothermia and transplantation of tissues. Perhaps the only area that isn't adequately covered is what might be termed surgical immunology and some of the information related to germ-free animals could be extended in future editions.

The bibliographies at the end of each chapter are not only ample, but contain, in my opinion, the outstanding references to work that has been done in the various fields discussed. This book can be highly recommended to anyone interested in surgical research, to surgical residents who are going to spend some time in research laboratories, and to surgeons in practice who like to dream and think in terms of the experimental approach employing surgery as a tool for enhancing our knowledge of fundamental biology.

Victor Richards, M.D.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[1] Marx, F.J., in *Trifluoperazine: Further Clinical and Laboratory Studies*, Philadelphia, Lea & Febiger, 1959, p. 89.
[2] Winkelman, N.W., Jr.: *ibid.*, p. 78.

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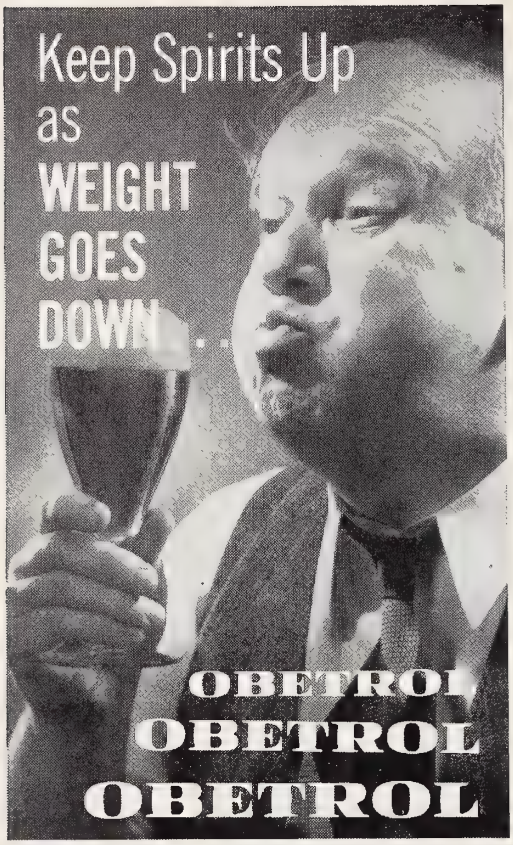

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Page 753

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Polygraph May Prove Predictor Of Coronary Disease

The polygraph, widely-used lie detection device, may prove capable of predicting likely candidates for coronary heart disease, two San Francisco physicians have said.

Drs. Meyer Friedman and Ray H. Rosenman said individuals with an organic disorder of the coronary arteries displayed polygraph reactions markedly different from normal individuals and those with a non-organic disorder of the heart and circulatory system when all were subjected to an irritating situation.

They reported their finding in the July 23 *Journal of the American Medical Association.*

The study was based on the authors' previous report that persons whose personality is characterized by "excessive competitive drive, a persistent desire for recognition and advancement, a persistent involvement in multiple functions subject to 'deadlines,' and a habitual propensity to accelerate their pace of living and working" (termed behavior pattern A) also exhibit about seven times as much coronary heart disease as persons with the converse type of personality.

The polygraph, they said, offers a test to detect this behavior pattern A objectively by an untrained observer.

In the latest study, a group of 20 persons suffering coronary heart disease, another group of 15 normal persons, and a third group of 7 persons with cardiovascular disease underwent a polygraph test while listening to a tape recording designed to cause irritation.

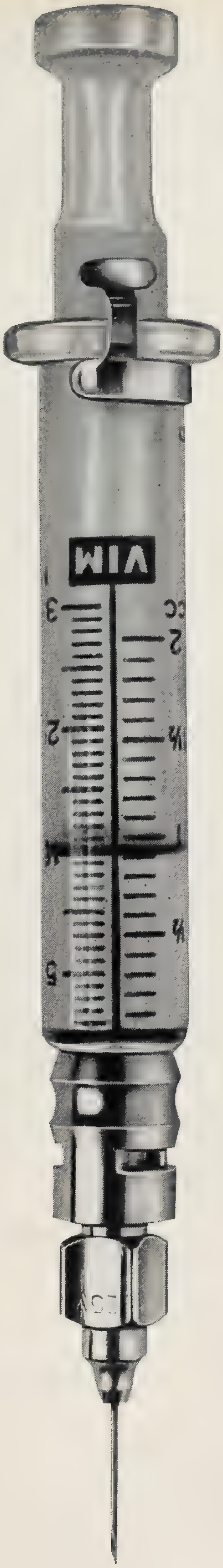
The polygraph results showed that the patients with coronary disease were clearly differentiated from the other two groups by a rapid rise in the respiratory wave when inhaling, by a greater expansion of the upper as compared to the lower half of the chest, by a threefold greater incidence of respiratory deformities, by a twofold greater incidence of body movements, and by the frequent occurrence of hand clenching.

"Hence, it appears to us that any person subjected to this test, who exhibits two or more of these criteria during the audition of the challenge recording, might be considered as probably possessing the characteristics of overt behavior pattern A.

"The possession of this particular behavior pattern in a subject does not, however, indicate that he has, or will necessarily contract, coronary heart disease.

"It only implies . . . that his chances of future susceptibility to clinical coronary heart disease will be markedly enhanced."

Studies to test this hypothesis are now under way, they said, adding that the polygraph "may lend itself to mass predictive studies."



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Open-Heart Surgery Restores Three to Normal Life

Open-heart surgery has been credited with restoring to a normal life three persons with heart ailments which are sometimes fatal.

The medical success story is related by five Philadelphia physicians in the May 21 issue of the *Journal of the American Medical Association.*

The three patients, aged 44, 55, and 56, all had survived heart attacks, but later were stricken with ventricular aneurysms.

This condition, in which a weakened section of the heart wall develops a bulge, is a fairly common sequel to a heart attack and more often than not results in death in three to five years, the *Journal* article said.

With the use of a heart-lung machine to temporarily bypass the patient's heart and lungs, the physicians operated and removed the aneurysm of each.

"These three patients, incapacitated before operation, have shown marked improvement . . .," they said. "All three tolerated the operation well and are working regularly and carrying out normal activities . . . two 26 and one 19 months after operation."

The ability of these patients to survive a heart attack severe enough to produce the aneurysm and the presence of the aneurysm itself helps to explain their excellent response to the operation, they pointed out.

An advantage of this open-heart method is that it allows the removal of any blood clots from the affected heart chamber which even can be emptied of blood and washed out if necessary, they added.

Eight other such operations of this type, which proved successful, had been reported previously, the article said.

Authors of the article are Drs. John Y. Templeton III, George J. Haupt, John J. McKeown Jr., Richard T. Cathcart, and William T. Fraimow, department of surgery and the cardiopulmonary physiology laboratory, Jefferson Medical College.

Heart Attacks Found in as Many Women as Men Past 50

Heart attacks are as common among women as men beyond the age of 50, according to an autopsy study at three large medical centers in widely separated geographical areas.

A total of 13,485 autopsies performed at Barnes Hospital, St. Louis; Massachusetts General Hospital, Boston, and Radcliffe Infirmary, Oxford, England, were analyzed by Drs. Fairfield Goodale, Hanover, N. H., and Wilbur A. Thomas and Robert M. O'Neal, both of St. Louis.

The findings, reported in the June *Archives of Pathology*, published by the American Medical As-

(Continued on Page 76)

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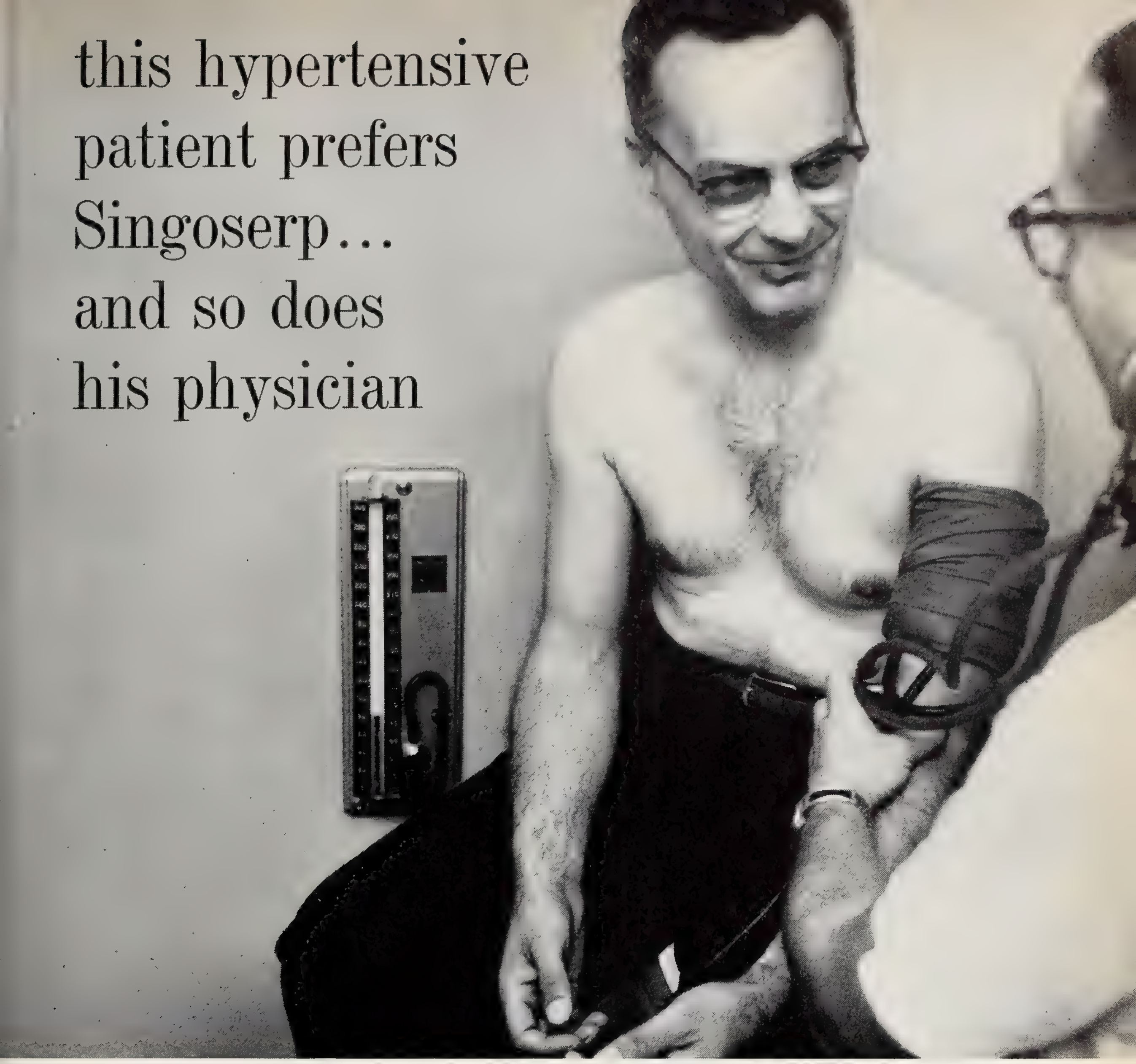

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Heart Attacks Found in as Many Women as Men Past 50

(Continued from Page 74)

sociation, showed the incidence of heart attacks "is equal in men and women past 50 years of age."

Of the 13,485 autopsies, heart attacks were found in 1,372. Only 154 of the 1,372 occurred in persons under 50.

Among those under 50, heart attacks were more prevalent in men than women by a two-to-one ratio.

The study confirmed a similar report made in 1956 which was based on autopsies performed only at Barnes Hospital.

"Because of the undoubted selection of patients that occurs in any single medical center, the study was extended to two other institutions, confirming the results of the initial study," the authors said.

In the latest study, the incidence of heart attacks found at autopsy at Barnes was compared with the incidence of diagnosed heart attacks among patients discharged alive from the hospital.

In the group of discharged patients, the over-all incidence of heart attacks among men was three times that among women. In the under-50 group, the ratio of men to women was 12 to 1.

This "remarkable preponderance" of men discharged with diagnosed heart attacks, six times as

(Continued on Page 78)

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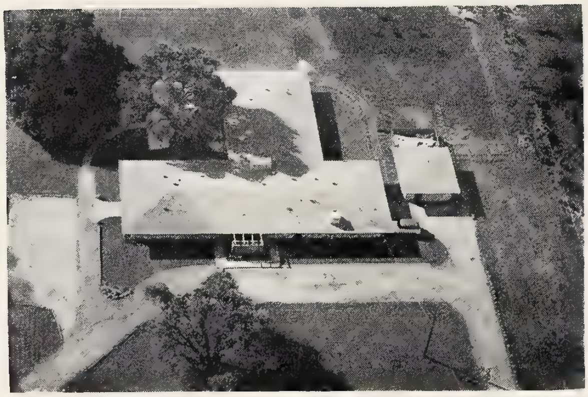

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References: 1. David, N. A.; Porter, G. A., and Gray, R. H.: Monographs on Therapy 5:60 (Feb.) 1960. 2. Friend, D. H.; Clin. Pharm. & Therap. 1:5 (Mar.-Apr.) 1960. 3. Ford, R. V.: Current Therap. Res. 2:92 (Mar.) 1960.

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Little Recognized Symptom Of Lung Cancer Reported

The first physical manifestation of lung cancer in men may be breast enlargement, according to Dr. James D. Hardy of Jackson, Miss.

Writing in the July 30 *Journal of the American Medical Association*, Dr. Hardy described three patients whose lung cancer was associated with enlarged breasts.

Although this symptom may occur under a variety of other circumstances, he said, his report was "presented with a view to effecting a more general awareness that gynecomastia [breast enlargement in the male] is at times associated with lung carcinoma and may occasionally be the initial physical manifestation of this neoplasm.

"The endocrine factors responsible . . . are not clear," he said.

However, Dr. Hardy raised the possibility that the symptom might be caused by the lung tumor excreting a substance similar to the female hormone, estrogen. He said there had been recent reports indicating that tumors not associated with the hormone-producing endocrine glands were nevertheless capable of producing the same physical changes caused by the endocrine glands.

"Gynecomastia is only one of numerous systemic manifestations which have now been reported in association with various localized 'nonendocrine' tumors," he concluded.

Dr. Hardy is associated with the department of surgery, University Hospital, University of Mississippi Medical Center.

Heart Attacks Found in as Many Women as Men Past 50

(Continued from Page 76)

great a ratio as that found in autopsied patients of the same age, suggests that the diagnosis is less obvious in young women than in men, perhaps solely because the possibility of the diagnosis is not often entertained in young women, the researchers said.

Autopsies provide objective, accurate information regarding the cause of death, they pointed out, whereas most diagnoses are at best educated guesses.

However, they said, "great caution is necessary in using data derived from autopsies for drawing conclusions regarding the general population because immeasurable factors of selection are present."

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No Serious Blood Changes From Long Antibiotic Use

The long-term use of antibiotics to treat diseases of the skin does not result in any "dangerous" blood abnormalities, a recent study showed.

The study is reported by Drs. Victor H. Witten, Marion B. Sulzberger, and Frank Krasner, department of dermatology and syphilology, New York University Postgraduate Medical School, New York City, in the July 30 *Journal of the American Medical Association.*

Although our conclusions are based on patients having dermatological diseases (preponderantly acne vulgaris), we believe that they can probably be applied to patients affected with other conditions for which systemically acting antibacterial agents may have to be used for long periods," they said.

"In this study 100 patients presenting a wide variety of dermatoses were continuously treated with systemically acting antibacterial agents for a period ranging from months to many years.

"Most important is the fact that no changes of serious consequence were noted in the peripheral blood picture of any patient treated with systemically acting antibacterial agents over prolonged periods.

"This study indicates that changes in the peripheral blood count do occur during the long-term administration of antibiotics. These changes may or may not be attributable to the drugs. In our series they were never dangerous but in general only temporary and, ordinarily, did not necessitate the cessation of therapy."

The authors explained that some of the more recently developed antibacterial agents which affect the body as a whole have been among the most effective forms of therapy for certain skin diseases. But they said the danger of producing blood abnormalities has been one of the strongest factors limiting the long-term use of such agents.

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1. Pomeranze, J. et al.: J.A.M.A. 171:252, Sept. 19, 1959. 2. Walker, R. S.: Brit. M J. 2:405, 1959. 3. Odell, W. D., et al.: A.M.A. Arch. Int. Med. 102:520, 1958. 4. Pearlman, W.: Phenformin Symposium, Houston, Feb. 1959. 5. Lambert, T. H.: ibid. 6. Skillman, T. G., et al.: Diabetes 8:274, 1959. 7. Sugar, S. J. N., et al.: Med. Ann. Dist. Columbia 28:426, 1959.

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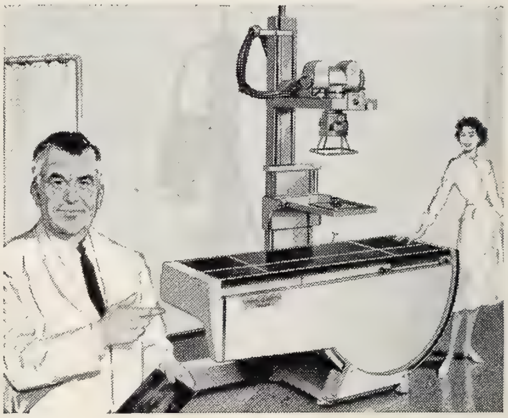

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Sabin Urges Nation to Seek End Of Polio by Next Summer

Dr. Albert B. Sabin, developer of the live polio virus vaccine that bears his name, recently urged that an attempt be made to eliminate polio in the United States before next summer.

In an editorial in the July *Archives of Internal Medicine*, published by the American Medical Association, Dr. Sabin said:

"The laboratory and field experiences with the oral poliovirus vaccine strains that I selected are now available for decisive judgment, and two American pharmaceutical companies expect to have the required number of successive lots of vaccine produced under the safeguards specified by the National Institutes of Health by autumn of 1960.

"The question now remains whether the health authorities and physicians of the United States are ready to take the necessary steps for an attempted elimination of poliomyelitis from the country before the summer of 1961 or whether the country will continue to pay the high current price for only partial prevention of the paralytic disease?"

The Public Health Service has delayed licensing the Sabin vaccine pending "evidence of safety and lack of significant reversion to virulence," according to a statement by Surgeon General Leroy Burney last December.

Since the Sabin vaccine is produced from live virus strains that are weakened until harmless, it was feared that the viruses might regain their power to cause the disease after the vaccine is administered.

In this connection, Dr. Sabin cited field tests in Estonia and Lithuania as "the best obtainable field experience not only on the safety of the vaccines used but also on their effectiveness in the elimination of paralytic poliomyelitis."

In these field trials, he said, vaccination of 50 to 60 per cent of the most susceptible age groups was completed before the summer of 1959.

The naturally occurring polioviruses in the unvaccinated group as well as those emanating from the hundreds of thousands of susceptible persons infected by contact with the vaccinated group had an opportunity to spread during the summer period when there has always been an incrase in the number of polio cases, he said.

A thorough followup of the results of the vaccination program showed an absence of the summer increase as well as an "unprecedented reduction in the incidence of poliomyelitis in the entire population" of the two republics, he said.

Dr. Sabin said these field trials were "a reasonable basis for the attempt to eliminate completely paralytic poliomyelitis and its causative viruses by feeding the vaccine to almost all susceptibles in a population."

(Continued on Page 108)

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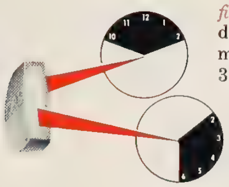

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Chickenpox Can Be Fatal in Adults

Chickenpox in adults is "a potentially fatal disease," a Texas physician has warned.

Writing in the July 2 *Journal of the American Medical Association*, Dr. Stewart A. Fish of Dallas said it has become evident that chickenpox, which is usually a mild childhood disease, may cause severe complications and death in adults.

Dr. Fish reported four fatal cases of chickenpox occurring during pregnancy. In three of the cases, the mothers were exposed to the disease by their children. In all four cases, the disease affected the lungs and other parts of the body.

However, he said, "there is apparently no specific tendency or increased susceptibility to chickenpox during pregnancy."

In 66 cases of disseminated chickenpox reported since 1942, the sex distribution is fairly equal, he said, and the association with pregnancy is probably coincidental.

The mortality among patients with disseminated chickenpox has been estimated to be between 10 and 30 per cent, he added.

Since there is no drug therapy available which will cure disseminated chickenpox or modify its course once the lungs and other parts of the body are involved, Dr. Fish urged early hospitalization of patients with disseminated chickenpox.

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REFER TO PDR Page 669

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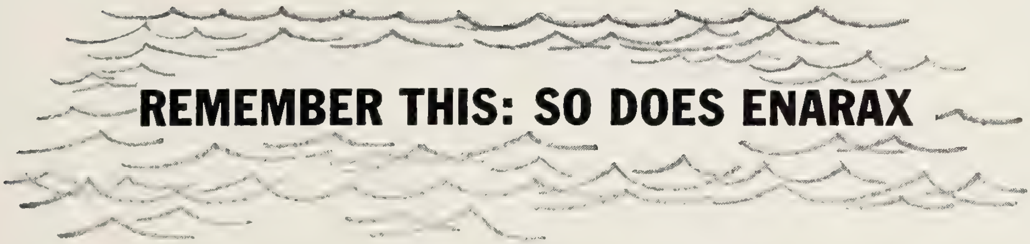

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References: 1. Steigmann, F., **et al.**: Am. J. Gastroenterol. **33**:109 (Jan.) 1960. 2. Hock, C. W.: to be published. 3. Leming, B. H., Jr.: Clin. Med. **6**:423 (Mar.) 1959. 4. Data in Roerig Medical Department Files.

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Safety Rules for Power Mowers

Hundreds of adults and children are maimed each year by power mowers, *Today's Health* magazine reports.

"Most accidents are due to carelessness," according to the August issue of the magazine published by the American Medical Association.

The following safety rules for operating power mowers were recommended:

—Clear the lawn of rocks, wire, and other debris beforehand.

—Keep feet away from blades when starting the mower.

—Keep bystanders and pets from the mowing area.

—Know how to stop the engine quickly.

—Operate the mower slowly enough to maintain control and never leave it running unattended.

—Store gasoline in an approved, tightly sealed container in a safe place.

—Don't cut up and down hills. Always cut sideways.

—Never attempt to remove an object from the mower until the blades have come to a standstill.

—Don't refuel the engine when it is hot. It may burst into flames.

—Don't use an electric mower when it is wet or when it is raining.

—When mowing over rough terrain, set the blades high to prevent them from picking up debris and hurling it like shrapnel.

Sabin Urges Nation to Seek End Of Polio by Next Summer

(Continued from Page 92)

Such an eradication program has been carried out in Hungary where almost all children from two months to 14 years of age have been vaccinated, he said, and similar programs are now in progress in Russia and Czechoslovakia.

"In order to rob the naturally occurring paralytogenic polio-viruses [viruses that cause paralytic polio] of the soil on which they grow, it would be necessary, in a country like the U.S.A., to feed the oral vaccine within a relatively short period of time during the winter and spring months to most pre-school- and school-age children, regardless of the number of doses of Salk vaccine they might have had," Dr. Sabin said.

"The relative cheapness of the oral vaccine and the ease of its administration should permit community-wide programs that would make the vaccine available to all without reference to ability to pay. This would provide a means of protecting not only the individual but also the community."

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Internal Medicine	Two Weeks, Oct. 17
Respiratory Allergy	Two Weeks, Sept. 9 & 10
Hematology	One Week, Oct. 10
Diagnostic Radiology	Two Weeks, Oct. 17
Board of Surgery Review, Part I	Two Weeks, Nov. 7
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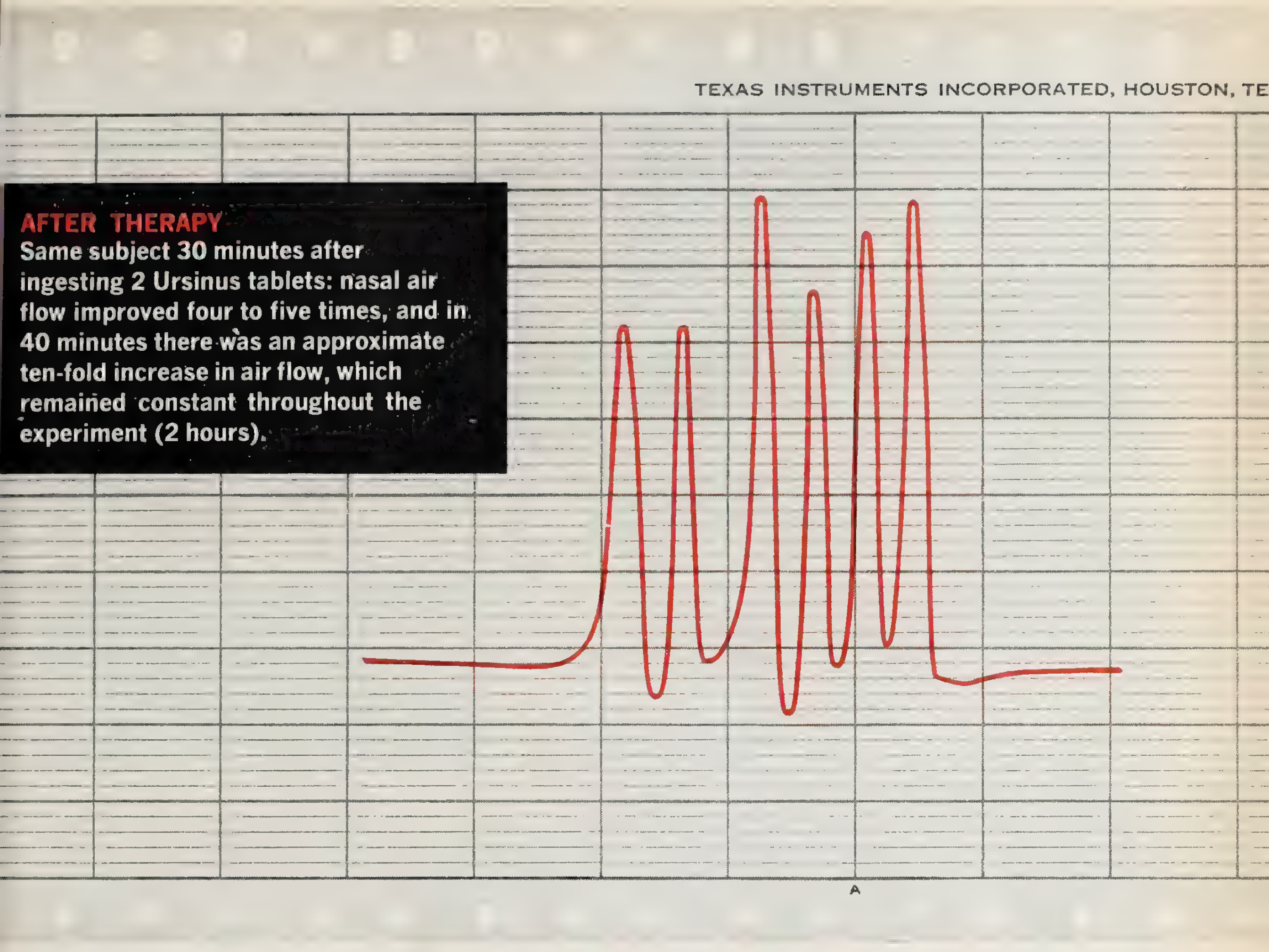

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1. Smylie, H. G.; Webster, C. U., and Bruce, M. L.: *Brit. M. J.* 2:606, Oct. 3, 1959. 2. Hodges, F. T.: *GP* 14:86, Nov., 1956.

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New Drug Successful Against Rheumatism, Arthritis

A recently developed drug has produced "good to excellent" improvement in patients suffering rheumatoid and arthritic disorders affecting one or two joints of the body, a Chicago physician reports.

Writing in the June 4 *Journal of the American Medical Association,* Dr. Emil D. W. Hauser said triamcinolone acetonide (Kenolog) proved successful in 66 of 67 such patients.

"Benefits were manifested by a sharp reduction in stiffness, tenderness, and pain; by a subsidence of swelling; and by an increase in joint mobility," he said.

"Most patients noted a better response to triamcinolone acetonide than to hydrocortisone, and this was achieved with considerably lower dosage."

Hydrocortisone is the most widely used agent for direct instillation into the affected joint, the method used to test the new drug, Dr. Hauser said.

Since there are limitations on the amount of material that can be introduced into a joint, he said, the potency of the drug is an important influence on the success of treatment.

Dr. Hauser said his experience had shown the drug to be "highly potent" while there was no evidence it caused any toxic reactions.

Rise in Hospital Infections May Be "More Apparent Than Real"

The widespread impression that the rate of postoperative infections in hospitals is increasing may be "more apparent than real," according to the *Journal of the American Medical Association.*

A study to determine the rate of infection following 3,089 operations for removal of part of the stomach (subtotal gastrectomies) performed at Massachusetts General Hospital, from 1932 to 1958, is reported in the July 9 issue of the *Journal.*

The study showed a 16 per cent incidence from 1932 through 1940, 4.1 per cent from 1941 through 1953, and 9.4 per cent from 1954 through 1958.

The increase in the latter five-year period is largely the consequence of a greater incidence of infection in the general hospital service, the *Journal* article said. In the same period, the incidence of infection in the private service was only 5.5 per cent.

Furthermore, the increase in infection in the general hospital service reflected a rise in the number of emergency subtotal gastrectomies performed, the article said.

A policy change in the administration of the emergency ward and mounting dissatisfaction with nonsurgical treatment of massive stomach hemorrhages contributed to a far greater number of

(Continued on Page 25)

Congenital Heart Ailment Diagnosed Prior to Birth

An inborn defect in a baby's heart can now be diagnosed prior to birth by using an electrocardiograph.

The same technique also may help uncover the cause of such defects, according to Saul D. Larks, Ph.D., and Lawrence Longo, M.D., Los Angeles.

They reported the accurate diagnoses of heart block in three infants prior to birth with the new method in the July 16 *Journal of the American Medical Association*.

The usefulness of the electrocardiograph in the unborn would be restricted to diagnosing malformations which alter the electric field of the heart since the electrocardiograph can chart only the current produced by the contraction of the heart muscle, they said.

Recent improvements in instruments, technique, and understanding make it possible to obtain a highly accurate electrocardiogram of the unborn infant as early as the 22nd week of pregnancy, they pointed out.

It is reasonable to assume that some malformations determined prior to birth can be corrected surgically, they said, adding:

"With ample warning, adequate time for preparation, and with improvement of smaller heart-lung instruments, such surgical intervention, possibly immediately after delivery, may save lives."

The authors said new avenues of fruitful research may be opened by the new technique in the determination of precisely when certain congenital malformations develop. Conceivably, they added, it could be determined whether these defects are inherited or result from some infective process during pregnancy.

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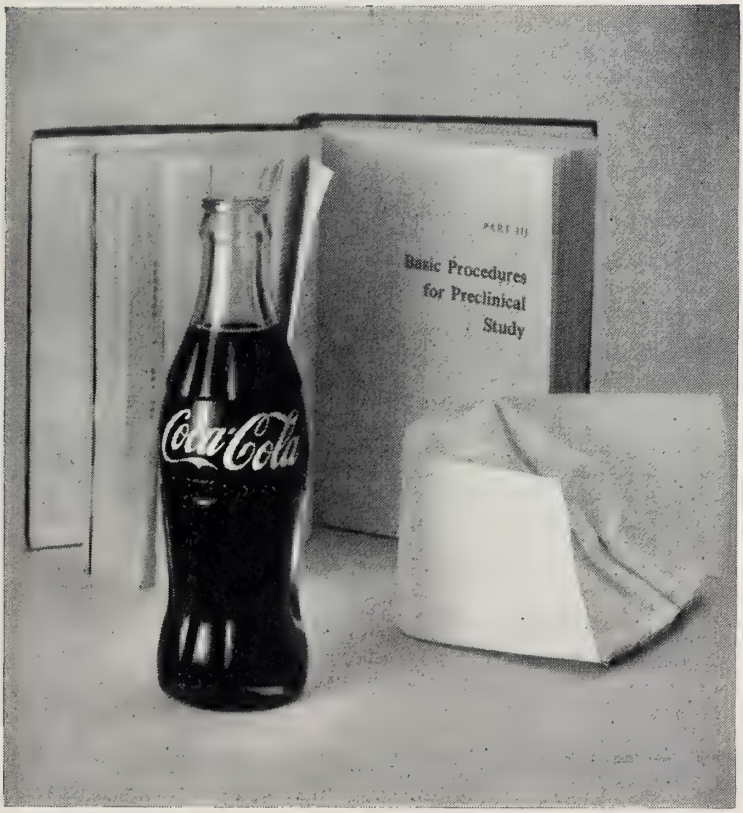

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And although amphetamine-barbiturate combinations may counteract excessive stimulation–*they often deepen depression.*

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Bibliography *(13 clinical studies, 858 patients)*: **1.** Alexander, L. (35 patients): Chemotherapy of depression – Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. 166:1019, March 1, 1958. **2.** Bateman, J. C. and Carlton, H. N. (50 patients): Meprobamate and benactyzine hydrochloride (Deprol) as adjunctive therapy for patients with advanced cancer. Antibiotic Med. & Clin. Therapy 6:648, Nov. 1959. **3.** Beerman, H. M. (44 patients): The treatment of depression with meprobamate and benactyzine hydrochloride. Western Med. 1:10, March 1960. **4.** Bell, J. L., Tauber, H., Santy, A. and Pulito, F. (77 patients): Treatment of depressive states in office practice. Dis. Nerv. System 20:263, June 1959. **5.** Breitner, C. (31 patients): On mental depressions. Dis. Nerv. System 20:142, (Section Two), May 1959. **6.** Gordon, P. E. (50 patients): Deprol in the treatment of depression. Dis. Nerv. System 21:215, April 1960. **7.** Landman, M. E. (50 patients): Clinical trial of a new antidepressive agent. J. M. Soc. New Jersey. In press, 1960. **8.** McClure, C. W., Papas, P. N., Speare, G. S., Palmer, E., Slattery, J. J., Konefal, S. H., Henken, B. S., Wood, C. A. and Ceresia, G. B. (128 patients): Treatment of depression – New technics and therapy. Am. Pract. & Digest Treat. 10:1525, Sept. 1959. **9.** Pennington, V. M. (135 patients): Meprobamate-benactyzine (Deprol) in the treatment of chronic brain syndrome, schizophrenia and senility. J. Am. Geriatrics Soc. 7:656, Aug. 1959. **10.** Rickels, K. and Ewing, J. H. (35 patients): Deprol in depressive conditions. Dis. Nerv. System 20:364, (Section One), Aug. 1959. **11.** Ruchwarger, A. (87 patients): Use of Deprol (meprobamate combined with benactyzine hydrochloride) in the office treatment of depression. M. Ann. District of Columbia 28:438, Aug. 1959. **12.** Settel, E. (52 patients): Treatment of depression in the elderly with a meprobamate-benactyzine hydrochloride combination. Antibiotic Med. & Clin. Therapy 7:28, Jan. 1960. **13.** Splitter, S. R. (84 patients): Treatment of the anxious patient in general practice. J. Clin. & Exper. Psychopath. In press, April-June 1960.

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Adoption Should Be Kept From Child Aged 3 to 6

Children between the ages of three and six are too young to be told they are adopted, according to Dr. Marshall D. Schechter of Beverly Hills, Calif.

He reviewed the psychological problems associated with the early knowledge of their adoptive status in 16 children in the July *Archives of General Psychiatry*, published by the American Medical Association.

"The striking thing in most cases was that the feature of their adoptive status played a significant role in the underlying dynamics of the problem," he said.

"It would appear that children who have been adopted have potentially a more fertile soil for development of neurotic and psychotic states."

Dr. Schechter termed the period from three to six years "the age of Oedipal conflicts" when the child forms a strong attachment to the parent of the opposite sex while becoming aggressive and envious toward the parent of the same sex.

"The knowledge of their adoptive status, so often coming in at the time of the Oedipal conflict, can seem to prolong and actually prevent the resolution of this particular area of personality development," he said.

Moreover, the confidence the child has built up in his parents, particularly the mother, is weakened and destroyed, he said, adding that the effect on the child's personality can be devastating.

"Certainly learning and object relations can be profoundly disturbed," he said.

"Their whole basic method of accumulating knowledge and relying on objects is doubted. This must affect all subsequent learning. . . ."

Dr. Schechter also said that "the anxiety these children manifest often refers to the possibility of returning to their original parents or, having been given up once for undetermined reasons, they may be given up again at some future time—also for undetermined, fantasied reasons."

In conclusion, he said, these 16 cases suggest "that the immature ego cannot cope with the knowledge of the rejection by its original parents. . . .

"The child tends to react to this information by character change or symptom formation.

"It is, therefore, recommended that the thorough investigation of the child and his environment should be accomplished to determine the method and timing of giving the information of his adopted status."

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Sun Can Damage the Eye Despite Dark Glasses

Smoked glass or dark glasses cannot protect the eye from the direct rays of the sun.

"There is unfortunately a widespread misunderstanding that dark glasses are sufficient to protect the eye when one looks directly at the sun," according to Dr. William W. Bolton, associate director, Department of Health Education, American Medical Association.

Writing in the July issue of *Today's Health*, published by the A.M.A., Dr. Bolton said after each eclipse of the sun "a certain number of persons are observed to have permanent damage of the retina, with loss of central vision, even after using smoked or dark glasses."

"Even when the sun is partially obscured, its rays are still very intense," he said. "Dark glasses only screen against reflected glare that results as the sun's rays strike the earth."

A.M.A. Drug Specialist Joins Abbott Laboratories

Dr. Harold D. Kautz, secretary of the Council on Drugs of the American Medical Association, recently announced that he had accepted a position as director of the Division of Product Information in the Medical Department of Abbott Laboratories, North Chicago, Illinois.

Dr. Kautz, who has been connected with the council in various capacities for 21 years, takes up his new duties about August 15. In his new post, he will direct the work of a corps of writers, who prepare scientific information on Abbott products for the medical profession.

Dr. Kautz came to the A.M.A. council in June 1939 when it was known as the Council on Pharmacy and Chemistry. He is the sixth secretary since the council, second oldest in the American Medical Association organization, was organized in 1905 as a standing committee of the American Medical Association Board of Trustees.

Born in Fremont, Neb., June 13, 1908, Dr. Kautz received his B.A. degree from the University of South Dakota, Vermillion, in 1932, and his M.D. degree from the University of Nebraska College of Medicine, Omaha, in 1937.

He took his first position with the American Medical Association as medical associate on the council staff after interning at the University of Nebraska Hospital, and serving as resident physician at Carle Memorial Hospital, Urbana, Ill.

From 1942 to 1946, Dr. Kautz served with the Army Medical Corps during World War II. He was chief of laboratory service, 67th station hospital in Africa, and served also in the same capacity at the 93rd station hospital in Dakar, French West Africa.

Dr. Kautz is married, has one son, Allan, 14, and lives at 310 Brandon Avenue, Glen Ellyn, Ill.

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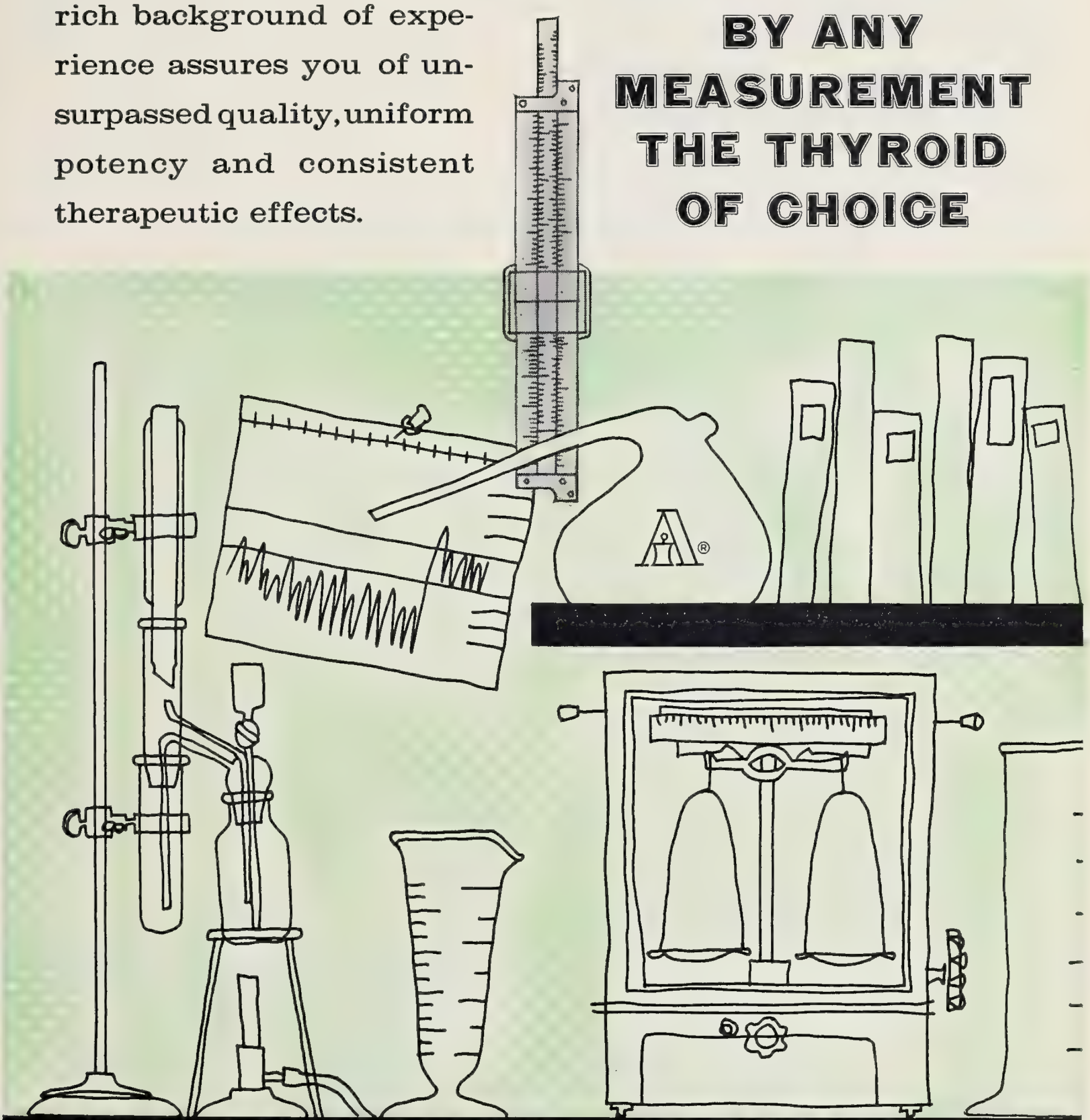

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Home Test for Toxemia Aids Prenatal Care

A simple home test can enable an earlier diagnosis of toxemia of pregnancy and provide better prenatal care, according to three New York City physicians.

Drs. Jacob Clahr, Edwin J. Pear, and Leon S. Gabaef reported on the home test program in the July 30 *Journal of the American Medical Association.*

Toxemia is a complication of pregnancy characterized by high blood pressure, general swelling due to retention of fluids, and an increase of the protein, albumin, in the urine.

Testing for the presence of protein is done routinely during prenatal office visits. However, the authors felt a home test each day, or every other day, would detect the disease quicker. This can be accomplished by passing a specially treated paper strip through the urine. The paper will turn a greenish-blue if protein is present.

For the past year these physicians have recommended the home test for patients who showed some signs of being potential victims of the disease.

Among the first 50 of these patients, one detected evidence of protein five days before her next scheduled office visit. She was immediately hospitalized and gave birth to a healthy baby. A previous preg-

(Continued on Page 48)

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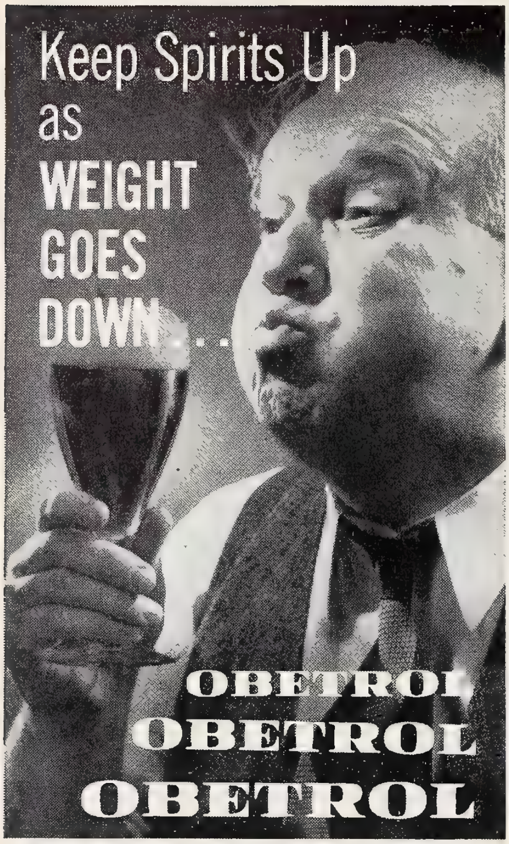

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Medical Students Learn "Family Care"

Medical students, under supervision, are being given the responsibility of caring for entire families as part of their training in preventive medicine at the University of Vermont.

The program is described by Dr. M. Alfred Haynes, Burlington, Vt., director of the family care unit, department of preventive medicine, University of Vermont, in the July 23 *Journal of the American Medical Association.*

About 100 families participate in the program and receive free medical care. Medical students enter the program at the beginning of their junior year and continue through the senior year. A junior-senior pair of students is assigned two families and each student cares for the same families for the two years.

"Such a period allows the student to note not only the sporadic illnesses which occur but also the natural history of disease and the influences of environmental factors on the health and well-being of the family unit," Dr. Haynes said.

"He learns to distinguish the well person from the sick person and to evaluate both. He combines prevention, cure, and rehabilitation in the total care of the patient.

"It [the program] is intended to teach not clinical medicine but community medicine, nor is it intended primarily to teach facts but to develop the attitudes of comprehensive medical care."

Dr. Haynes said a full-time teaching team, consisting of a physician, a public health nurse, and a medical social worker, "has frequent discussions, apart from the students, to ensure that the family's needs are being met and that the student is using the medical, nursing, and social resources which are available."

The family care unit was organized under the chairmanship of Dr. Leon R. Lezer.

Home Test for Toxemia Aids Prenatal Care

(Continued from Page 44)

nancy of the patient had resulted in a stillbirth associated with toxemia.

"It is reasonable to assume that had she not detected the proteinuria, a five days' delay would have occurred before her condition would have been detected at her next scheduled visit," the physicians wrote.

"As so often happens within this short interval, a severe grade of toxemia may result before initiating therapy. The potential risk involved in such a delay is well established and may have resulted, in this case, with a second stillbirth."

The three physicians are associated with the department of obstetrics and gynecology, Morrisania City Hospital.

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Coolidge, C. W.; Glisson, C. S., and Smith, A. S.: J.M.A. Georgia 48:167, 1959.

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A.M.A. Stand on Help for the Aged

The American Medical Association urged the Republican Committee on Resolutions to adopt, as Party policy, a plan for helping "those of the aged who need help in the financing of their health care."

Dr. Leonard W. Larson, Bismarck, N. D., president-elect of the A.M.A., appeared before the committee that drafted the Republican Party's 1960 platform. He said that "the American Medical Association is entirely in favor of helping those who need help.

"But the association does not believe this necessitates the creation of massive federal machinery to help those who neither need nor want help, and who are capably handling their own problems at the present time."

Dr. Larson pointed out that the majority of the aged are in good health, and that "relatively few of them are hardship cases."

Further, he said, "the effort of private citizens working together at the community level is getting much of the job done already. And private health insurance and prepayment plans now enable most of the aged to finance their own health care under a wide diversity of plans.

"This is as it should be.

(Continued on Page 58)

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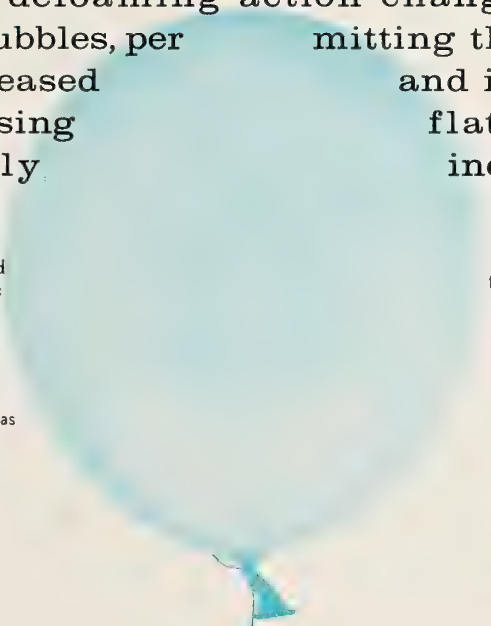

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Solitude Found Beneficial To Psychiatric Patients

Temporary isolation has proved beneficial to some psychiatric patients, according to a study reported in the July *Archives of General Psychiatry*, published by the American Medical Association.

The conclusion was drawn from a study of 30 male neuropsychiatric patients conducted by three psychologists at the Veterans Administration Hospital, Richmond, Va.

The subjects were placed in a quiet, air-conditioned observation room where they lay on a bed with their eyes covered and ears plugged. They were free to leave the room any time they wished. None was kept in the room for longer than six hours.

Each patient was interviewed a day before, a day after, and a week following the experiment to record their behavior characteristics.

"Positive changes for the group as a whole considerably outnumbered negative changes," the researchers reported.

"Furthermore, positive changes were more enduring than negative changes.

"Positive changes apparently reflected more persisting internal modifications of a beneficial and therapeutic nature, while negative changes appeared

(Continued on Page 68)

A.M.A. Stand on Help for the Aged

(Continued from Page 52)

"The majority must be allowed to continue its use of the voluntary method without Federal interference. To compel that majority to accept Federal medicine rather than allow it to buy its own medical care voluntarily, through its own resources, subverts the very principles upon which a free, democratic government must be based.

"Those who propose massive Federal intervention in this field are, in effect, denying the right of individuals to pay voluntarily for their own health care and insisting that this right belongs to the Federal Government."

Dr. Larson said that the nation's physicians are "convinced that the health costs of the needy and near needy can best be determined locally, can best be administered locally, and can neither be determined nor administered adequately through mechanisms operating by remote control from Washington, D. C."

He added, "The A.M.A. believes that the Republican Party should base this portion of its health plank on the principle that the Federal Government should help only those who need help, as determined locally; that action should be responsive to the needs of the individual and the community through local administration, and that such action should supplement, rather than supplant, state, local and private action."

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Volume 93 OCTOBER 1960 Number 4

Salivary Gland Tumors

GEORGE S. SHARP, *M.D.*, and
JAMES T. HELSPER, *M.D.*, Pasadena

- **In a review of a series of 248 salivary gland tumors, seen over a 28-year period, all pathologic material was brought up to date by reclassification according to more recent criteria and nomenclature. In parotid tumors, a probable lowered recurrence rate and a definite decrease in incidence of permanent facial nerve paralysis was found in the more recent cases in which the "Y" incision was used, with identification of the seventh nerve as it leaves the stylomastoid foramen. The five-year recurrence rate for primary mixed tumor was 8.3 per cent, and in recurrent cases it was found to be 18.1 per cent.**

Of 44 patients with malignant salivary gland tumors in all sites who were observed for five years or more, 32 or 72.7 per cent survived five years.

In view of the surgeon's continued interest in the subject of salivary gland tumors, we reviewed our own material covering a 28-year period from 1932 to 1959 inclusive. All slides of tissues removed from patients either suspected of or proved to have tumors of salivary gland origin were reviewed histologically by Alvin G. Foord, M.D., and regrouped in general according to the classification and nomenclature used by Frank W. Foote, Jr., M.D., and Edgar L. Frazell, M.D., in their fascicle published by the Armed Forces Institute of Pathology[7] and in their comprehensive article in *Cancer*.[8] We are particularly grateful to Dr. Foote and to Dr. Fred W. Stewart for consultation on some of the more difficult slides.

Records of 248 cases covering a total of 251 tumors were reviewed. Three of the benign tumors were bilateral and are considered as single cases. The series, therefore, included 175 benign and 73 malignant tumors (Table 1). Of particular importance in the clinical management of these patients are the data on the last line in this table, showing that approximately 23 per cent of the parotid tumors, 42 per cent of the submaxillary, and 49 per cent of the minor salivary gland tumors were found to be malignant. Many of these patients when they were first seen had no signs of malignant disease other than the presence of the lump. These percentages should be kept firmly in mind in planning the treatment of such patients.

Table 2 shows the age and sex distribution. The only comment to be added here is that the youngest patient with a malignant tumor (age 22) had an acinic cell carcinoma in the parotid gland.

Tables 3, 4 and 5 give data on how many of the tumors, as they were found in the various glands, were benign and how many malignant. Of particular note in the benign group is that all except three of the tumors found in the submaxillary and minor salivary gland regions were mixed tumors. Malignant tumors were found in all the glands. Several lymphomas were also seen in the malignant group;

Presented before the Section on General Surgery at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

From the School of Medicine and the School of Dentistry, University of Southern California, the Pasadena Tumor Institute and Pasadena Foundation for Medical Research (Sharp). From the College of Medical Evangelists, Los Angeles, and the Pasadena Tumor Institute (Helsper).

however, they are merely mentioned and not discussed since it is felt that they arose in lymph nodes in either the parotid or submaxillary gland, and no case (as far as we are able to determine) has been found to be primary within the gland itself.[1,6,7]

Diagnostic Summary

CHANCES OF MALIGNANT CHANGE:	
In parotid tumors	1 out of 4
In submaxillary tumors	2 out of 5
In minor salivary glands	1 out of 2
RATIO:	
Parotid to submaxillary tumors	16 to 1

Benign Salivary Gland Tumors

Mixed tumor—A total of 133 patients were seen with mixed tumors. One hundred and four occurred in the parotid, six in the submaxillary, and 23 in the minor salivary glands throughout the mouth. In the parotid group, 96 were primary untreated, and 11 had been operated on elsewhere. Of the 96, 62 were observed five years or more and in that time five recurred but were controlled by re-excision. Of the 11 originally treated elsewhere, two recurred and both were controlled by re-excision. As far as we know, no patients died of disease as long as the tumor remained benign. None of the patients operated upon through the "Y" incision (described later) had recurrence, but not enough time has elapsed for valid conclusions as to recurrence rate.

Papillary cystadenoma lymphomatosum (Warthin's tumor)—All of our 18 cases of Warthin's tumor were found in the parotid, and all were in males although approximately 10 per cent of these tumors are reported to occur in females.[1,6,7] In two patients the tumors were bilateral, and in one instance there were two distinctly separate tumors on one side and a single tumor on the opposite side. Clinically these generally were seen first as a cystic lesion. In no case was recurrence noted.

Oxyphil adenoma—Clinically these are undistinguishable from benign mixed tumors. All four of our cases occurred in the parotid, and none recurred.

Benign lymphoepithelial lesion—A total of 13 patients were seen with this lesion. Eleven occurred in the parotid and two in the palate. All but one were in women. In one case the disease was bilateral, the second lesion appearing approximately three months after the first was removed. Five of the parotid lesions contained large cysts. In no case was recurrence noted.

TABLE 1.—*Percentage of Malignant Tumors*

	Parotid	Sub-maxillary	Minor Salivary	Total
Benign	143	7	25	175
Malignant	44	5	24	73
Total	187	12	49	248
Per cent malignant	23.5	41.7	49.0	29.4

TABLE 2.—*Age and Sex Factors*

BENIGN:	
Oldest	80 years
Youngest	18 (with 9-year history)
MALIGNANT:	
Oldest	84 years
Youngest	22 (with 6-year history)
AVERAGE AGE	51.1 years
SEX (females)	61 per cent

TABLE 3.—*Benign Salivary Gland Tumors*

	Parotid	Sub-maxillary	Minor Salivary	Total
Benign mixed	104	6	23	133
Warthin's	18	....	....	18
Oxyphil adenoma	4	....	....	4
Benign lymphoepithelial lesion	11*	—	2	13
Miscellaneous	6†	1	....	7
Total	143	7	25	175

*Includes 5 lymphoepithelial cysts.

†Consists of 2 lipomas, 2 hygromas, 1 lymphadenitis and 1 simple cyst.

TABLE 4.—*Malignant Salivary Gland Tumors*

	Parotid	Sub-maxillary	Minor Salivary	Total
Malignant mixed	8	....	....	8
Mucoepidermoid:				
Low grade	5	....	5	10
Moderate grade	2	2	3	7
High grade	1	....	....	1
Squamous cell	4	1	....	5
Adenocarcinoma:				
Adenoid cystic	7	1	12	20
Acinic cell	4	....	....	4
Adenocarcinoma	5	1	4	10
Anaplastic	1	....	....	1
Miscellaneous*	7	....	....	7
Total	44	5	24	73

*Note: The miscellaneous group of malignant tumors consists of 4 lymphomas primary in nodes of parotid and 2 lymphomas occurring in nodes of parotid with signs of lymphoma elsewhere, and 1 leiomyosarcoma.

Malignant Salivary Gland Tumors

Malignant mixed tumor—Eight cases were seen, all occurring in the parotid. All were observed five years or more. In three of the cases the lesion recurred. In one it was controlled by subsequent operation, and two patients died of disseminated metastasis. Five were free of disease for five years or more.

Mucoepidermoid carcinoma—A total of 18 such lesions were seen, eight in the parotid, two in the submaxillary and eight in minor salivary glands. Ten were classified as low grade, seven as moderate grade, and one as high grade. Of the patients with low grade lesions who were observed five years or

TABLE 5.—*Minor Salivary Gland Tumors*

BENIGN	Palate	Lip	Cheek	Gum*	Pharynx	Total
Benign mixed	17	1	2	1	2	23
Benign lympho-epithelial lesion	2	....	....	....	....	2
Total	19	1	2	1	2	25
MALIGNANT	**Palate**	**Lip**	**Cheek**	**Gum***	**Tongue**	**Total**
Mucoepidermoid	4	1	1	1	1	8
Adenocarcinoma	5	2	6	1	2	16
Total	9	3	7	2	3	24

*Note: Most histologists feel that no salivary gland tissue is in the gum or gingiva; however, clinically these tumors appeared to begin in this area.

more, four were living and well and one was dead of the disease. Of the three with moderate grade who were observed five years, two were living and well and one was dead of the disease. The patient with high grade tumor, who had been operated upon first elsewhere, died of widespread disease seven months after we carried out radical excision.

Squamous cell carcinoma—Four of these lesions were seen in the parotid and one in the submaxillary gland. Only two of the patients were available for five-year observation. One with a parotid lesion was free of disease five years or longer. The submaxillary gland tumor recurred promptly after operation, but was eventually controlled by neck dissection and the patient remained free of disease for five years.

Adenocarcinoma—There were 34 cases of adenocarcinoma, 16 in the parotid, two in the submaxillary and 16 in minor salivary glands. Of these, 20 were of the adenoid cystic type, four acinic cell and ten ordinary adenocarcinoma. Of the 15 patients with adenoid cystic lesions who were observed five years, seven had local recurrence. In three of the seven the lesions were eventually controlled and four died of the disease. It is of interest to note that two of the patients were first seen with widespread metastasis, and minimal procedures were used to control the primary tumor. These patients both lived over five years with widespread disease and at last report were dying of cancer. In both instances the lesions were adenoid cystic carcinoma, one of the floor of the mouth and one of the hard palate.

All four acinic cell cancers were controlled by parotidectomy. Three of the patients were given subsequent radiation or treatment with radon seeds. All lived five years or more without recurrence.

Ten cases of ordinary adenocarcinoma with varying cell patterns were seen. Five were in the parotid, one in the submaxillary, and four in the minor salivary glands. Six of the patients were observed five years or more. Two died of the disease.

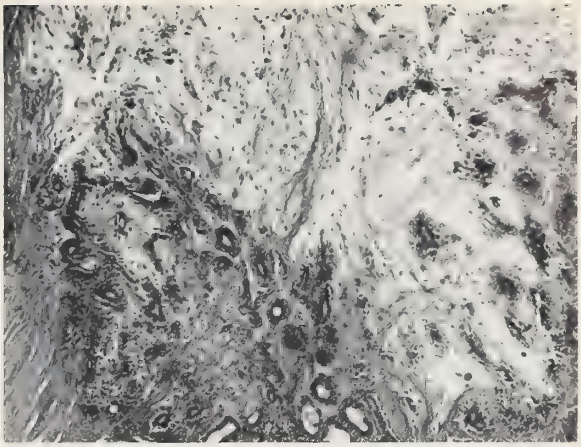

Figure 1.—Benign mixed tumor of parotid gland. Note aggregates of epithelial cells in which are several tubules. Epithelium shades directly into loose stroma (×125).

Anaplastic carcinoma—In the one case of anaplastic carcinoma of the parotid, death occurred in less than five years, of obvious disease.

PATHOLOGICAL FEATURES

The gross and microscopic appearances of the lesions in the present series correspond fairly well with those reported by Foote and Frazell[7,8] and by Ackerman.[1] Briefly, the findings in the various tumors were as follows:

Benign Tumors

Benign mixed tumor—The term *mixed tumor* or *complex adenoma* has been accepted for decades for this commonest tumor, which is generally about 2 to 5 cm. across, occurring singly but commonly appearing in multiple nodules of varying size if recurrence results from inadequate removal. Occasionally tumors of this kind may become huge without metastasis occurring. A tense, thin capsule, all too easily torn, usually surrounds an ovoid or slightly bosselated mass, varying in consistency from tumor to tumor or even in different parts of the neoplasm. A goodly number are largely myxomatous. The surgeon may easily tear a growth of this type, and the pathologist has much difficulty in trying to cut and trim appropriate pieces for histologic study. Others with a component of connective tissue or cartilage may be quite firm. True bone is rare. It was noted in only one of our cases, in the parotid gland.

Microscopically, extreme variations occur. The most common pattern is that of a growth in which groups of epithelial cells of polyhedral, stellate or spindle shape grow in a matrix of myxomatous, fibrous, or cartilage-like stroma and fade out and fuse with the stroma (Figures 1 and 2). Tubule-like or gland-like structures or irregular aggregates of squamous epithelium may be seen. Spindle shaped epithelial cells may be separated by myxoid, fibrous or hyaline stroma forming a meshwork pattern, or may grow in strands or bands forming narrow or broad trabeculae. Occasionally very little stroma is seen and the tumors may be quite cellular. However, evidence of mitoses, anisocytosis and nuclear hyperchromatism associated with malignancy is not seen.

Thackray[20] studied by serial sections ten parotid glands containing mixed tumors and found occasional bulging of the capsule by outgrowth of tumor in small foci of such a nature that simply shelling out the tumor would result in leaving a small bit of tumor behind. Multiple sections of parotid tissue from which mixed tumors had been enucleated also showed portions of tumor left attached to a fibrous tissue capsule in several cases.

Papillary cystadenoma lymphomatosum (Warthin's tumor)—This interesting lesion, first described by Albrecht and Artz in 1910,[3] has borne as a common name in this country "Warthin's tumor," after Warthin's report of two cases in America in 1929.[21] These nodules are usually encapsulated, semi-fluctuant or partially cystic, and exude mucoid gray or brown fluid when cut. Clefts or collapsed cystic spaces are found in an opaque gray matrix resembling a faucial tonsil. Microscopically, there are varying sized collapsed spaces into which protrude blunt papillary processes covered by epithelium underneath which is abundant lymphoid tissue (Figure 3). The definitely oxyphilic epithelium is characteristically of two layers, the one nearest the lumen being tall columnar, with small round nuclei lying above the center of the cell nearest the lumen. The cells of the deeper layer are more polyhedral, less evenly arranged, with nuclei more vesicular than those of the cells lying on top of them. We have observed many areas in these tumors where the cells are piled up several or many layers thick. Rarely a suggestion of squamous metaplasia was encountered, especially in tumors of long duration in which atrophy of lymphoid tissue and blunting of papillae had occurred.

Oxyphil adenoma—These are rare tumors, sometimes called oncocytomas, composed of acidophilic cells somewhat resembling so-called Hurthle cells in thyroid tumors. They are usually soft, resilient, encapsulated tumors about 3 to 4 cm. across, commonly removed after a history of long duration. Only rarely does one see cyst formation but in one of our four cases there was a cyst occupying over half the sectioned surface. The surfaces made by sectioning usually show a tinge of brown or tan mixed with red or pink. Microscopically, the tumors are made of large cells with small round nuclei and abundant acidophilic cytoplasm which under high power is finely granular (Figure 4). They are characteristically arranged in columns, cords or small aggregates separated only by a very thin fibrous stroma containing small nutrient vessels. Malignant change has not been reported, but there are few cases of this type of adenoma in the literature. There was only one, in a total of 877 salivary gland tumors, included in Foote and Frazell's survey.[7]

Benign lymphoepithelial lesion—The term *benign lymphoepithelial lesion,* proposed by Godwin in 1952,[10] is used for the lesion previously called by various names, including *solid adenolymphoma* and *lymphoductal tumor,* and which commonly in the past was erroneously diagnosed by pathologists as lymphosarcoma or lymphoma of some other type. Basically there is proliferation of lymphoid tissue in the gland involved, accompanied by proliferation

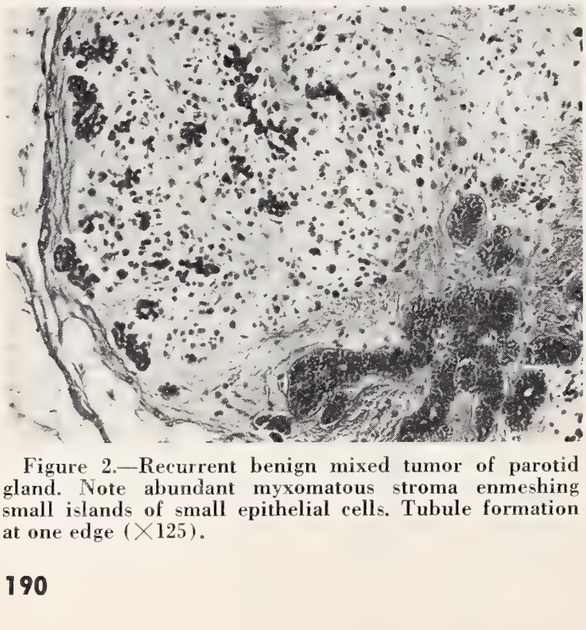

Figure 2.—Recurrent benign mixed tumor of parotid gland. Note abundant myxomatous stroma enmeshing small islands of small epithelial cells. Tubule formation at one edge (×125).

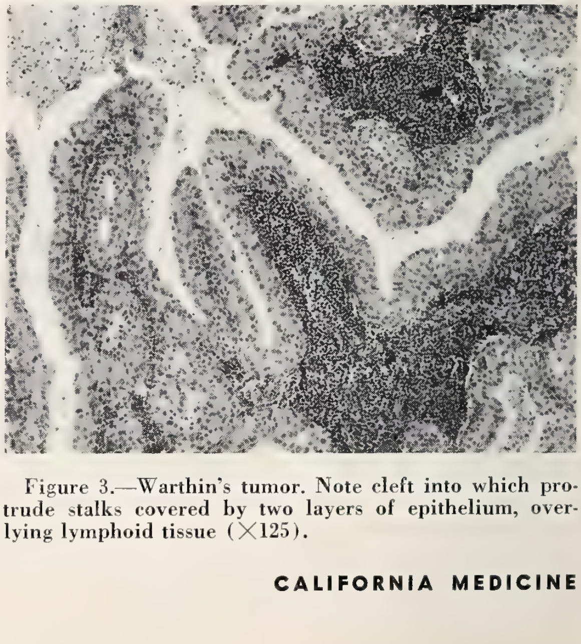

Figure 3.—Warthin's tumor. Note cleft into which protrude stalks covered by two layers of epithelium, overlying lymphoid tissue (×125).

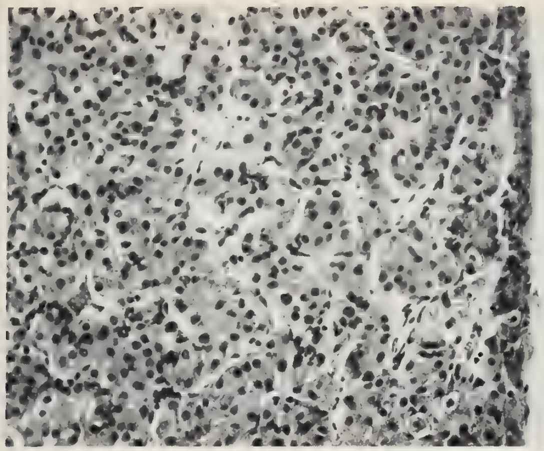

Figure 4.—Oxyphil adenoma. Small aggregates of oxyphil cells are packed together with little intervening stroma (×250).

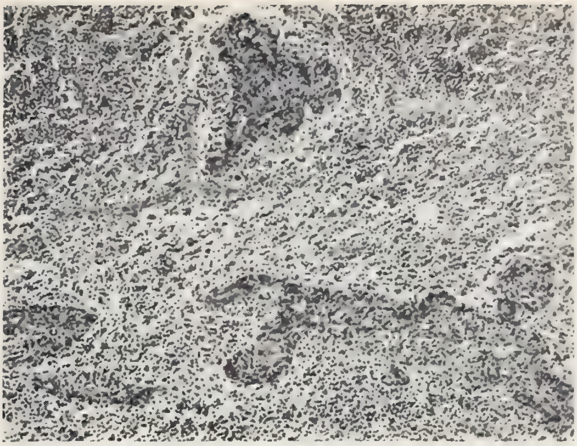

Figure 5.—Benign lymphoepithelial lesion. Lymphoid tissue replacing acinar tissue contains ducts in which proliferation of epithelium appears to fill lumens (×150).

of small or medium sized islands of epithelium (Figure 5) diffusely throughout the involved portion, which may be a small focus, a tumor-like localized lesion or nearly the entire salivary gland, replacing the salivary glandular tissue in the involved areas. The lymphoid and epithelial growth is orderly, and germinal center formation is usually present in the lymphoid tissue. The epithelial cell islands appear to have originated in ducts, growing as polygonal, cuboidal, or irregularly shaped cells showing poorly defined walls and even appearing sometimes much like a syncytium. Mitoses, anachromasia, and hyperchromatism, characteristically seen in malignant lesions, are absent.

Malignant Tumors

Malignant mixed tumor—Foote and Frazell[7,8] and others include under this heading tumors meeting two requirements: "(1) that sections reveal areas having the structural qualities found in ordinary mixed tumors, and (2) that they contain areas of different structural makeup which by experience have been shown to be associated with metastases." In other words, to classify a neoplasm under this heading, one must find evidence of a mixed tumor pattern in some part of the tumor and evidence of carcinoma of some type in another. The former may necessitate preparation of many sections since the carcinoma may overgrow and replace the original mixed tumor almost completely. Special diligence in this regard on the part of Foote and his coworkers, to the extent of making 100 blocks in one case, partly explains why 57 out of the 551 mixed tumors they studied were found to be malignant. However, one must also take into consideration the fact that the patients seen by the Memorial Hospital group commonly have more advanced disease (including many seen with recurrent disease after surgical failure) than do patients observed by the average surgeon in private practice. Ackerman[1] expressed the belief that malignant change occurs in less than 5 per cent of mixed tumors. Thackray[20] said 3 per cent. We noted malignant change in 6.2 per cent of such tumors.

On the whole, these tumors are larger than their benign counterparts. They are commonly fixed to the skin or surrounding soft tissues, and grossly may show evidence of peripheral infiltration. The presence of necrosis and hemorrhage in soft, mushy, friable areas is highly suggestive of malignant change. The histologic change is usually the production of atypical glands of adenocarcinoma, while in others squamous cell carcinoma develops. Rarely, spindle cell or giant cell carcinoma supervenes. In all of our cases the change was to adenocarcinoma. In one case in which a metastatic lesion developed in the lung the growth resembled the pattern of a mixed tumor and, in this, small foci of poorly differentiated carcinoma were seen (Figure 6).

Mucoepidermoid carcinoma—These tumors, so ably first described as a group entity in 1945 by Stewart, Foote and Becker,[19] are ductal in origin. Low grade tumors are usually fairly well circumscribed and moderately firm, and about half of them are partially cystic. The cysts usually contain moderately viscid and thin mucinous fluid. Less cystic change is found in more malignant tumors of this group, and more infiltration of surrounding tissue is encountered. In sections of low grade tumors one sees gland-like or duct-like spaces lined by mucus-secreting cells (Figure 7) and sheets or masses of epidermoid cells, sometimes partially keratinized. Less differentiated, smaller polygonal intermediate cells, from which by differentiation the mucous and epidermoid cells are derived, are seen in all tumors of this variety; but in the high grade neoplasms extensive overgrowth of sheets and nests of these cells is encountered. Only by careful

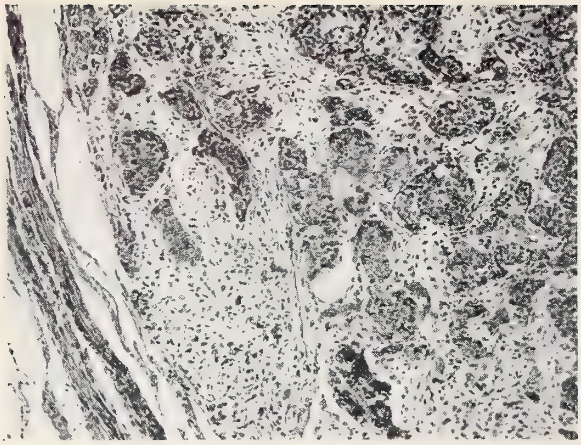

Figure 6.—Malignant mixed tumor, metastatic in lung. Loose stroma of mixed tumor type with varying sized islands of epithelium (×125).

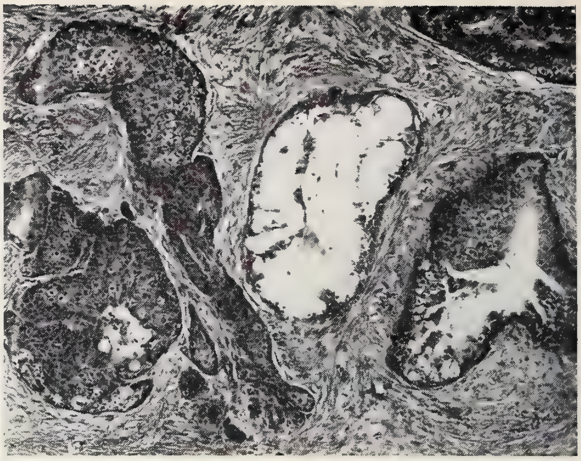

Figure 7.—Mucoepidermoid carcinoma, low grade. Central duct lined by mucus-filled cells. Other aggregates show squamous epithelium with some mucus-containing cells (×125).

study of multiple sections, employing routine sections and slides stained specifically for mucus, can one determine the true origin of these growths. In some cases overgrowth of squamous cells occurs to such a degree that the mucus-secreting component is nearly obscured, and in others overgrowth of the glandular pattern is present (Figure 8).

Adenocarcinoma (adenoid cystic)—This histologic entity, to which the term *cylindroma* was attached by Billroth about 100 years ago,[5] can be found in major and minor salivary glands as well as in mucus-secreting glands of the nasopharynx, sinuses, pharynx, trachea, bronchi, skin and breast. Grossly, lesions of this order are rather firm, gray-white homogeneous neoplasms, devoid of myxomatous components, and they commonly show evidence of infiltration of surrounding tissue. Microscopically, one usually sees varying sized sheets or nests of small, deeply staining epithelial cells, with dark, round or ovoid nuclei and scanty cytoplasm. In these sheets one sees varying sized spaces which may be empty or may contain mucus, hyalin or mucohyaline material (Figure 9). Some aggregates of cells may have no spaces and grow as solid sheets. In some growths abundant hyalin is produced, and one may see only small remnants of compressed epithelial cells growing in strings between hyalin columns. Widespread invasion into soft tissues is the rule, and perineural lymphatics and even nerve fibers are commonly extensively infiltrated. Distant metastatic lesions, especially in the lungs, are to be expected if local disease is not controlled.

Adenocarcinoma (acinic cell)—All of the four cases of this kind of tumor in the present series, and those of Foote,[7] 21 in all, occurred in the parotid. They are usually of low grade clinical malignancy, and histologically they have often been called benign adenomas. The pre-surgical clinical

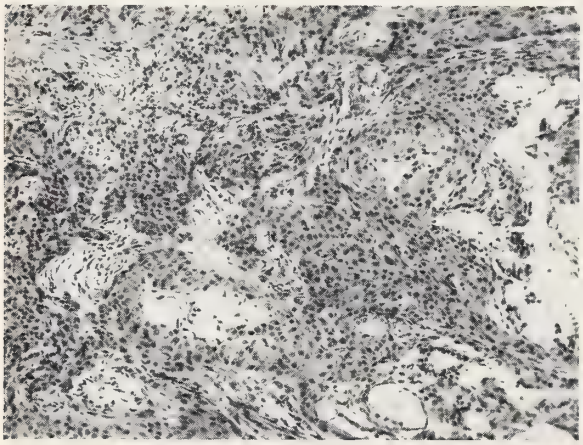

Figure 8.—Mucoepidermoid carcinoma, high grade. Note widespread proliferation of intermediate and poorly differentiated squamous cells. Goblet cells present in one duct-like structure (×125).

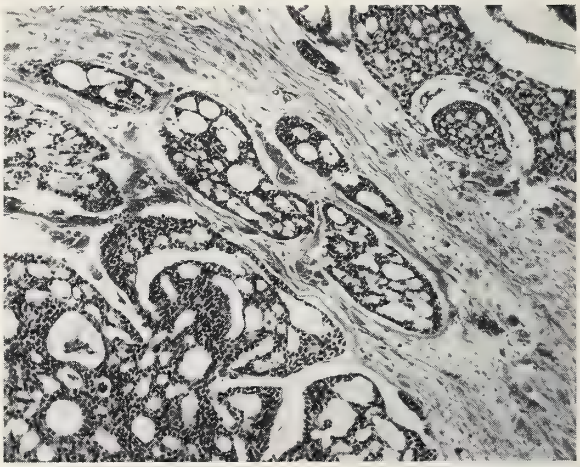

Figure 9.—Adenoid cystic carcinoma, ordinary pattern. Note varying sized aggregates of small epithelial cells in which are many small spaces, many empty (×125).

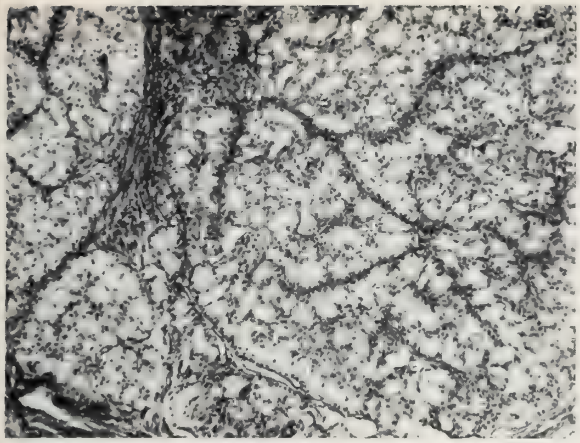

Figure 10.—Acinic cell carcinoma. Small gland-like spaces formed by "water clear" cells with small, dark, basally situated nuclei (×125).

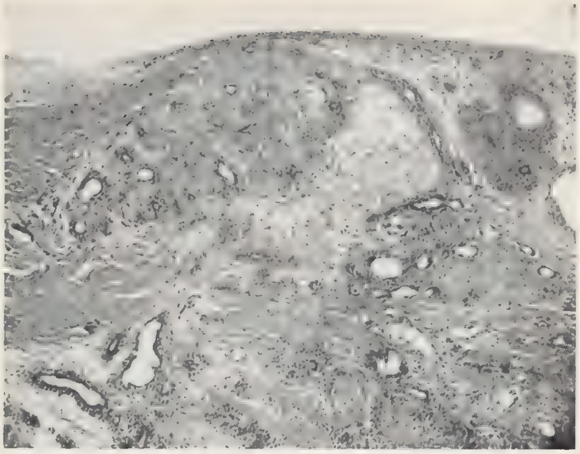

Figure 11.—Benign mixed tumor breaking through the "capsule." A nodule of tumor is shown extending outside of the pseudo capsule (×125).

history and the physical findings associated with them may be undistinguishable from those of benign mixed tumors. The tumors are usually encapsulated, gray-white, and often quite friable. Their microscopic pattern varies considerably, but usually one sees polygonal cells arranged in varying sized aggregates with little stroma, and formation of acini is present (Figure 10). The cells are about the size of parotid acinal cells; their nuclei are small, eccentrically and often basally situated. The cytoplasm varies from finely granular to water clear in appearance, and often in hematoxylin stains a bluish cast is present.

Adenocarcinoma—This group includes trabecular or solid adenocarcinomas in which epithelial cells grow in trabeculae or sheets without formation of glandular spaces. We have included also glandular cancers in which no residue of mixed tumor was seen in routine pathologic study. These are similar to adenocarcinomas of other organs.

Anaplastic carcinoma—We observed only one case of anaplastic carcinoma, composed of epithelial cells showing much variation in size and shape, and growing in no definite pattern.

MANAGEMENT

General—With regard to clinically distinguishing between benign and malignant lesions, we would like first of all to reemphasize the importance of the specific gland in which the tumor occurs, remembering the percentage of malignant disease reported for each gland. In addition, we have noted the following: (a) A relatively short history suggests malignancy. (b) Pain suggests cancer. (c) Large tumors suggest cancer. (d) In the case of parotid tumors, a slight weakness or complete paralysis of the facial nerve is almost pathognomonic of cancer. (As a corollary here, it is imperative in parotid tumors to make a careful examination of each area from the forehead to the neck to determine if there is any slight facial weakness.) And (e) the presence of cervical metastasis is, of course, diagnostic of malignancy.

Parotid gland—In the parotid gland it was the senior author's usual method in the past to explore the parotid area through a small incision over the tumor mass, with excision of the mass and a margin of normal salivary tissue about it. In the larger and more deeply placed tumors it was necessary to dissect out the seventh nerve—usually beginning with one of the smaller branches and working back, finding the larger branches, and then removing the gland superficial to the nerve itself.

More recently we have adopted the "Y" shape of exposure[11,12] with mobilization of the external auditory canal, finding the nerve as it comes out of the stylomastoid foramen, following the main trunk forward and dissecting the gland off the nerve with the tumor mass enclosed in the gland. At times it is necessary to remove the tumor from beneath the nerve, or from the deep lobe behind the ramus of the mandible. In these cases it is mandatory to identify the nerve and all its branches.

The practice of enucleation of parotid tumors should be mentioned only to be condemned, for no matter which way the nerve is identified and isolated, the tumor itself in all cases must be removed with a sufficient amount of normal parotid tissue on all sides wherever possible. As has been brought out by many observers,* most tumors of the parotid and submaxillary glands, while appearing to have a definite capsule, actually are not encapsulated (Figure 11). The anatomical capsule merely represents condensed normal salivary gland tissue. There are numerous small extensions of the tumor beyond this capsule, so that if the tumor is removed within the capsule there will remain, as has been shown on serial sections,[16,20] small fragments of tumor scattered throughout the edge of the excision (Figure 12). These will recur and appear to be multiple seedings of the tumor.

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*References 1, 4, 6-9, 11, 12, 16, 17, 20.

We have followed the principle of obtaining a frozen section in all cases, and should the diagnosis be malignant we usually do an immediate neck dissection, except as noted below. In the past we often did an upper neck dissection in the lower grade malignant lesions, but now we feel that a complete neck dissection is preferable. However, in these cases (acinic cell and low grade mucoepidermoid adenocarcinomas) it may be deferred until metastatic lesions in the neck are evident. In the high grade lesions, on the other hand, an immediate and complete neck dissection should be carried out in all cases.

Of the 29 patients with parotid gland cancer who were observed for five years or more, 22 were living without evidence of disease.

Submaxillary gland—In the submaxillary gland the higher incidence of malignant disease, as shown by our percentages, should alert surgeons to be prepared for neck dissection if necessary at the time of operation. Our usual method is to use a long, curving incision overlying the gland. It has been our practice to preserve the ramus mandibularis of the seventh nerve unless it is found to be invaded by tumor. In that case we would not hesitate to sacrifice it. The gland is removed with a wide margin of normal tissue and submitted to the pathologist. If an immediate diagnosis of malignant disease is obtained, radical neck dissection is performed, with sacrifice of the adjacent musculature to the submaxillary gland.

In the past we have not been able to carry this out in all instances. However, in two cases in which there was definite cancer found, with subsequent recurrence, both were controlled by neck dissection at the time of recurrence. There have been no recurrences of benign tumors in this gland. Of the three patients with malignant submaxillary tumors observed five years or longer, two were living without evidence of disease.

Minor salivary gland—Minor salivary gland tumors are seen in all areas of the oral cavity, and wide local excision with adequate margin is carried out. If the tumor is malignant and bone is involved, especially of the lower jaw, it is usually recommended that the patient have excision of the intraoral primary tumor in continuity with resection of the mandible and a radical neck dissection, in order to control the disease. When the malignant tumor is in the upper jaw, radical maxillectomy with preservation of the orbit is frequently necessary, neck dissection being reserved for patients in whom metastatic lesions are clinically manifest by enlargement of the lymph nodes.

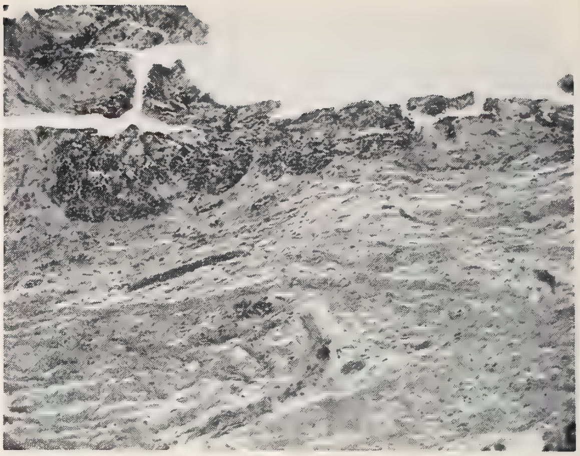

Figure 12.—Residual benign mixed tumor after enucleation. A benign mixed tumor was removed by enucleation; the surgeon then thought better of it and did superficial parotidectomy. Section shows the bed from which the enucleation had been done, with numerous areas of residual mixed tumor (×125).

Of the 12 patients with minor salivary gland cancer who were observed five years or more, eight were living free of disease when last examined.

The Place of Ionizing Radiation in the Control of Salivary Gland Tumors

While the treatment of both benign and malignant tumors of the salivary glands is primarily surgical, there are reports[2] of good results, particularly in the malignant group, by various forms of radiotherapy. In our series several of these methods were used, but all of them as adjuncts to primary surgical excision. Of particular value was the application of gold-filtered radon seeds or radium needles. In cases in which margins were narrow or excision could not be completed, these methods were employed, usually calculated to give about 5,000 to 5,500 r to the area in question. Also, in cases where the capsule was broken during excision, interstitial radiation was used to sterilize the surgical field. In addition, we have combined external and interstitial radiation in some cases with good results. These various methods have been of definite benefit in improving the overall control and survival rate.

THE SEVENTH NERVE

In operations in the parotid area the hazard to the seventh cranial nerve is considerable, and although rather good fortune attended the initial phase of this series in those patients in whom the seventh nerve was not primarily identified, it is now generally felt that immediate identification and careful preservation of all its ramifications is essential in the treatment of these tumors. The seventh nerve should only be sacrificed in the case of malignant tumors where sacrifice is absolutely necessary in order to gain adequate margin to assure complete removal of the tumor, or where the nerve is actually invaded by tumor.

The patients with parotid tumors were divided into two chronological groups in order to study the comparative incidence and duration of paralysis following the two methods of operation, the initial group having been treated by the older method and the later group by the procedure in which the nerve is deliberately identified as it comes from the stylomastoid foramen and carefully followed. In the earlier group there was a 30 per cent incidence of paralysis, in which only two of the thirteen patients had return of function after a long period of palsy. In the later group, on the other hand, there was a 20 per cent incidence of paralysis and in every case it was only temporary. The earliest return of function was in one month and the latest in 18 months, the average for the group being 8.1 months. All of these patients showed earlier indication of returning function, but the data given are for complete function in every case.

A series was previously reported by the junior author[13-15] in which the nerve was intentionally sacrificed in 40 patients, 28 of whom were available for follow-up observation. One-fourth of these patients were noted to have return of function following resection of a segment of the 7th cranial nerve. Two of these patients had subsequent local excision of recurrent tumor in the parotid bed. Both had retention of function, following the repeated operation, to areas where there was any possibility for regrowth of nerve.

It was conjectured that this return of function was the result of a transference of motor fibers from the seventh to the fifth nerve. This conjecture is supported anatomically by the myriad plexi which exist between the fifth and seventh nerves, and clinically by a recent observation in one of the original patients.[15] This patient had return of function following resection of a segment of the seventh nerve. Later she had a recurrence of disease and underwent resection of the entire area, down to and including the periosteum of the mandible. The patient did well, with no diminution of function. However, trigeminal neuralgia subsequently developed and she was examined by a neurosurgeon. She then had an alcohol injection of the trigeminal nerve with subsequent loss of seventh nerve function and complete paralysis of the involved side of the face.

Returning to the statistics in the present series, the two patients in the early group mentioned above as having return of function (in whom the main nerve trunk undoubtedly was sacrificed, for both patients had malignant disease) would fall into this category, and probably represent a spontaneous return of function carried by the fifth nerve. Suffice to say that, should it become necessary in some patients to remove the seventh nerve, we are now able to state that without nerve graft or any other reparative procedure, at least 25 per cent will regain function.

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Psychiatric Units in General Hospitals

Problems in Development and Efficient Operation

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• An adequate 25-bed psychiatric unit can be housed in a wing of a general hospital. Even more important than physical facilities are competent personnel, to be headed by a chief psychiatrist and a psychiatric nurse supervisor, for the unit. Incorporating teaching facilities into the unit helps to integrate psychiatry into the other disciplines of medicine in a continuing educational program.

Having psychiatric units in general hospitals enables many voluntary patients to be treated in early stages of the disorder, with a high proportion of recoveries.

Medicolegal aspects and the lack of adequate coverage of mental disorders by voluntary prepayment health plans are serious problems in the economy of a unit. Improved hospital administration, expanded training programs, educational work by local mental health societies and modification of laws on malpractice and commitment will go far to help solve these problems.

THE PRACTICE of psychiatry in general hospitals began only about 35 years ago. At that time only a very few hospitals had psychiatric departments. Gradually the idea spread in the mid-West and East. By 1952, according to a survey made by the author and coworkers, of the 1600 larger hospitals in the United States, 205 had fairly adequate units of 15 beds or more, but only 129 of them were nongovernmental hospitals. Some general hospitals would admit a psychiatric patient briefly for emergency treatment or diagnosis, but at least half of the hospitals included in the survey did not admit a patient known to have a psychiatric disorder. We estimated that only about 20,000 of a total of 574,638 general hospital beds were available for psychiatric patient care—or about a third of the 60,000 beds considered a minimum need.

A book, "The Practice of Psychiatry in General Hospitals,"[1] contains the responses to the survey and to various articles on the topic. The book deals with the major problems connected with setting up and operating psychiatric departments. The study convinced me that every general hospital should offer some kind of psychiatic service. Adequate psychiatric facilities within general hospitals would attain the following results: (1) Shorten hospitalization and improve the quality of recovery; (2) prevent needless diagnostic and treatment expenses, on the basis that at least a fourth of all general hospital patients have psychiatric problems; (3) relieve state hospital overcrowding; and (4) improve public satisfaction with medicine and with hospitals and thus improve the general community health.

Since the already mentioned preliminary survey, the number of psychiatric units in general hospitals has expanded greatly. There are now more than 600. Patients previously excluded from general hospitals because of mental illness, alcoholism or drug addiction are being admitted in increasing numbers.

The organization and operation of such units present many special problems, some of which may be unfamiliar to administrators, psychiatrists or other medical personnel who have not had first hand experience in these departments.[2]

Planning and Staffing

Architectural and technical details are well covered in several excellent books and U. S. Public Health Service pamphlets. Personal experience permits me to say that an adequate 25-bed psychiatric department can be housed in an ordinary hospital wing, without prohibitive cost for remodeling. Sections for men and women need not be separate. Semiprivate rooms and small wards are better than private rooms; they facilitate group adjustments. Some space is essential for day rooms and for dining, occupational and recreational areas. Also needed are special interview, treatment, nursing and utility rooms. Soundproof, air-conditioned seclusion rooms are usually needed in a ratio of one for about every 20 patients. A combination of open and closed departments, with areas for daytime patients, is an ideal arrangement. A 25-bed department headed by a psychiatric nurse supervisor can function with such minimum personnel as one graduate psychiatric nurse, an assistant nurse or two senior student nurses, and two aides (a male and a female) for each 8-hour shift. Other needed personnel include an occupational and recreational therapist and, parttime a clinical psychologist and a psychiatric social

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worker. It is of great help to the psychiatrists who treat the patients to have the services of two psychiatric residents and one intern who can receive their graduate training in an accredited department.

In planning a psychiatric unit in a general hospital, it is extremely important to convince hospital administrators of the desirability and value of such a department. Some administrators believe that disturbed patients pose hazards of suicidal and homicidal behavior, or at least may be too noisy. Others object to the possibility of the long term use of beds for patients found to need protracted care or observation. Some believe that psychiatric departments will not pay their way. However, the great majority of administrators with any experience with these departments stress their great advantages.

Increasing appreciation of the role of emotional factors in many diseases has made the general hospital the proper, necessary place in which to teach psychiatry and conduct research. Here medical students, young physicians and nurses see psychiatry in its proper perspective and learn the importance of emotions causing or contributing to many illnesses besides the frank psychoneurotic or psychotic disorders.

Plans for Teaching Facilities in Psychiatric Units

A series of seminars should be held by the psychiatric staff to explain psychiatric methods to the nonpsychiatric administrative, medical and nursing staff. These discussions should center on such matters as rules of the department, types of patients to be admitted, methods of admission and voluntary admissions. Treatment methods for psychiatric patients requiring care in closed wards should be distinguished from the methods needed for patients having psychosomatic disorders. The management of suicidal patients should be explained, as should the occasional advisability of transferring from other departments patients with organic disease who show mental symptoms—for example a surgical patient who becomes delirious. The psychiatric nurse should take up the importance of correct charting of behavior and the various methods of psychiatric nursing. The hospital resident and intern staff should be instructed in the technique of interviewing not only patients but relatives. Considerable discussion of the problem of dealing with relatives and visitors in the department should be carried out. A manual regarding rules of the department, elementary aspects of mental illness and procedures in treatment should be given to relatives to help alleviate their concern.

A library to which physicians and nurses can refer concerning psychiatric problems is an important aid in the teaching program. Selected lists of pamphlets approved by the National Committee of Mental Hygiene and the reports of the Group for Advancement of Psychiatry should be incorporated in the library section. A separate library for patients has proved to be a very valuable aid in therapy, and special books are often prescribed by the attending psychiatrist according to the individual needs of the patient.

After the department is organized and functioning, regular weekly seminars should be continued by various attending physicians to discuss histories, diagnoses, nursing problems and special therapies. These seminars are attended by nurses, interns and residents. Monthly departmental meetings of the active staff to discuss problems that arise are mandatory. Special staff clinics should include various psychiatric problems to help orient the nonpsychiatric practitioner and show the value of psychiatric therapy. In short, all means possible should be employed to integrate psychiatry into the other disciplines of medicine in a continuous educational program.

The Staff

The most important step in establishing a department is to obtain competent psychiatric personnel. First, a chief psychiatrist or organizing committee, preferably with general hospital experience, should be given the responsibility of organizing the professional and nursing staff and integrating the unit within the general hospital.

No practitioner who is not fully qualified by training should be permitted to care for psychiatric patients. Board eligibility or certification in psychiatry is the usual criterion for staff membership. Rules and regulations, uniform and strictly adhered to, must include all nursing problems. They make the nurses' work interesting, instructive and efficient.

Physicians in other departments should have access to the unit, in order to treat patients with delirium and complicating medical and surgical diseases, but patients whose disease is entirely psychiatric should be referred to the psychiatrist. The problem of visitors is an important one. We have found from experience that as a rule patients should have visitors only by special permission of the psychiatrist in attendance. Often the influence of visitors leads to dissatisfaction of the patient and to premature dismissal, or raises other problems that interfere with adequate therapy.

Therapy

One of the advantages of having psychiatric units in general hospitals is that patients come in voluntarily for early treatment in the acute stage of a disorder. Treatment at this stage tends to prevent chronicity, and 80 per cent of patients are returned to the community within a few weeks. Most persons, given a choice, would rather have swift, early treatment for psychiatric disabilities in general hospitals, than the often difficult procedure of commitment to a state hospital.

As soon as psychiatric units are established in general hospitals, the incidence of consultations between other specialties in medicine and psychiatry goes up, which greatly helps the integration of psychiatry with other departments in the hospital. The biggest problem, that of overcoming prejudice against mental illness, requires education of a board of directors, of the medical staff and of the general public. Acceptance of psychiatry in general hospitals is one of the most valuable means of overcoming misconceptions and prejudices about mental illness.

Conditions found to be favorable to treatment in general hospitals include the severe neuroses, the psychosomatic disorders, all the toxic psychoses, acute major breakdowns such as depressions and excitements, alcoholism and drug addictions. The gravest problems in treatment are the schizophrenic patients. Patients with acute schizo-affective disorders can usually be straightened out in a few weeks' treatment, but those with more chronic types usually have to be transferred to the state hospitals.

At present we hear much about the concept of the therapeutic community or the open hospital, a concept that will grow. The major trends are for more and more open hospitals or therapeutic communities, which in turn create the need for greatly increased community rehabilitation services. Klapper's[3] list of 23 rehabilitation centers that admit ex-mental patients includes Herrick Memorial Hospital, in Berkeley. These patients, who make up about 2 per cent of the entire load, come from our 46-bed psychiatric unit and outpatient clinic; eventually the two will be coordinated. This trend means an increased, closer relationship of the general hospital with the community. The need is for integration of the general hospital as the true community hospital, and direction of the total program in the interest of the whole person, regardless of his type of illness.

A.M.A. Council Recommendations

The recent conference of mental health representatives of the state medical associations sponsored by the American Medical Association's Council on Mental Health agreed on these recommendations:

1. All new construction should provide community mental health centers and general hospital facilities for the psychiatric patients—not large public mental hospitals.

2. State medical societies should be encouraged to study ways to close the gap between organized medicine and the public mental hospital.

3. Private psychiatric hospitals should encourage staff relationships similar to those in general hospitals.

4. The psychiatric units of the general hospitals should function in terms of community needs and provide effective treatment for psychiatric emergencies.

5. Members of the staff of outpatient psychiatric clinics should improve their relationship with other physicians, especially with the referring physician.

6. The community must share in the responsibility of accepting the well patient back into its social life.

7. Mental health committees of state medical societies should set up widely representative groups to study the Uniform Mental Health Act as a basis for preparing a mental health bill acceptable to the state. The state medical societies should take up the problem and make recommendations.

Problems in Adequate Functioning of a Department

A few departments established in various parts of the United States have been abandoned after some months or years of operation. In general, the reasons have been problems in economics, medicolegal problems and poor communication between psychiatry and the general medical staff and administrative boards of the hospitals.[2]

Most of these problems can be solved by anticipating them: A special committee made up of representatives of the psychiatric staff, the nursing staff and the administrative staff of the hospital should be responsible for the necessary rules and regulations for the department's operation. In some instances, legal opinions concerning certain legal responsibilities of the hospital and general management of the department may be needed.

Medicolegal Problems

Malpractice problems are a most serious deterrent to the organization of psychiatric units in general hospitals. Far too many unjustified suits have been brought against psychiatrists in recent years. This problem seriously affects all medical practice. In one instance, a San Francisco hospital, because of legal opinions concerning potential malpractice problems, abandoned a plan that had been worked out for a psychiatric unit and otherwise approved. Accidents to psychiatric patients under treatment do constitute a risk. A paranoid patient, for example, can almost always find a way to start suit against a physician or a hospital. The American Psychiatric Association's standing committee on private practice should study this problem and cooperate with the parallel committee of the American Medical Association to obtain adequate legal protection. Many unjustified suits are settled out of court by insurance companies to avoid the expenses of trial.

Interpretations of the doctrine of *res ipsa loquitur* in California courts have so perverted the law that virtually the burden rests not upon the plaintiff to prove malpractice but upon the defendant physician to prove he acted competently.

Health Insurance

A further deterrent to successful operation of a psychiatric unit in general hospitals is the discrimination against psychiatric treatment by many Blue Shield and Blue Cross voluntary prepayment health insurance plans. Without uniform coverage through the voluntary prepayment insurance plan for all patients sick enough to require treatment in an accredited hospital, the increasing costs of psychiatric treatment will hamper the development of these units in general hospitals. Families have to make severe financial sacrifices to keep patients under treatment, even though the average stay is less than 30 days. Definite improvement has taken place in that 77 per cent of Blue Cross and Blue Shield plans throughout the country at the present time give some psychiatric coverage. However, Blue Shield plans in California still provide no such coverage. On the other hand, the successful Cleveland plan, probably the most progressive in the country, for 20 years has included psychiatric treatment without increasing the cost to the insured.[5]

In New York a two-year experimental program, Group Health Insurance, Inc., jointly sponsored by the National Association for Mental Health and the American Psychiatric Association, has a sample group of 75,000 persons who will be eligible for mental health coverage without increased premiums.[7] Actuarial data will be compiled. Weil stated that it is actuarily possible to include short-term hospitalization for mental illness with a 2 or 3 per cent increase in premiums.[6]

It must be pointed out to insurance companies again and again that they already pay for many episodes of mental illness under subterfuge diagnoses; and we must help mental health organizations, industrial unions and other lay groups to bring about a public demand for the inclusion of mental illness in the prepayment voluntary health insurance plans.

Changes Needed for Future Development of General Hospital Psychiatry

Mental hygiene societies should take steps to educate communities to understand mental illness and the local needs for treatment. All hospitals should be urged to admit mental patients if only for diagnosis, consultation and transfer, without prejudice. The larger hospitals should incorporate psychiatric departments.

Expansion of training programs for residents, interns, nurses and vocational aides is a great need because of the tremendous shortage of professional personnel. Psychiatric experience should be a requirement of all internships.

Hospital administrators must learn to interpret the needs and values of psychiatric treatment and overcome existing medical prejudices. Administrators should help solve economic problems by obtaining effective, comprehensive prepayment health insurance, and should advocate measures to expedite early hospital treatment, with easy transfer to and from public hospitals, without court procedure.

Future psychiatric units must include open units in the architectural planning. The use of colors and modern furnishings provides cheerful environments, with no resemblances to a prison. The enlistment of volunteer workers, and such auxiliary workers as Alcoholics Anonymous, the incorporation of group therapy wherever practical and the use of a plan under which selected patients may go to the hospital during the day but return home each night, go a long way toward solving the financial problem. The development of an outpatient clinic to work with the inpatient department and the greater use of outpatient treatment facilities for cooperative patients serve to cut down the extreme costs of hospitalization. Future departments will have to pay more attention to the geriatric problems of the aging population. Too many of the elderly patients have been considered hopeless seniles, whereas many of them have toxic delirious reactions or affective disorders that respond promptly to treatment.

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Psychiatric Inpatient Services in General Hospitals

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• Traditional asylum care of psychiatric patients leads to the isolation, confinement, and restraint of the patients, and to isolation of psychiatric practice from the rest of medicine. Modern psychiatric advances have demonstrated the disadvantages to both patients and their families of such isolation, confinement and restraint. It is in the best interests of patients and professional workers that inpatient psychiatric services be continuous with, and contiguous to, other medical services and to rehabilitation services of all kinds.

Examination of currently available information reveals a shortage of psychiatric beds in California, particularly for diagnosis and brief treatment. Thus, not only is there a need to develop psychiatric inpatient facilities, but also an opportunity to develop them along several different lines. Since both the Hill-Burton Act (federal) and the Short-Doyle Act (state) give financial assistance to only those psychiatric services established in general hospitals or affiliated with general hospitals, this requirement calls for examination in the light of experience with services so operated.

At first, the Short-Doyle Act was perceived as a panacea for the psychiatric ills of the state. Now it is beginning to be recognized as one method of providing additional mental health resources, rather than the exclusive method. As more short-term cases are treated in local, tax-supported, psychiatric units in general hospitals, an impact can be expected on the state hospital program.

In its administration of the Short-Doyle Act, the Department of Mental Hygiene attempts to respond to community needs as locally determined. It tries to insure local option and encourage local responsibility while furthering high standards of staffing and of service.

The point of view of the authors of this paper takes into account the history of psychiatric hospitals, the present state of psychiatric beds of all kinds and locations, the wide gap between needs and resources, and the fact that the quality of services is just as important as the quantity in setting goals, in planning programs and in developing psychiatric inpatient facilities.

The traditional asylum care of psychiatric patients arose from the need to isolate the patient in order to protect society (if not the patient), and to alleviate for the family the social stigma of mental illness. The location of mental hospitals remote from inhabited areas, confinement of patients, physical restraint and the disruption of social and family ties were all assumed to be necessary. Even "non-restraint" meant restraint by attendants or by means of drugs, and, although therapeutic goals were benignly conceived, treatment that amounted to punishment of the patient was commonly practiced. Although punitive attitudes toward mentally ill patients have changed periodically, depending upon economic, religious, political and cultural determinants, the practice of isolating most psychiatric patients and the assumption that they are incompetent have continued. The physical isolation of the patient was accomplished through location of the asylums in remote geographic areas and through security measures. The moral isolation of the asylum inmates was achieved through legal commitments and a formal legal statement of the incompetence that was assumed to be present. A third kind of isolation inevitably occurred as a consequence, and that was the separation of the care of the "insane" from the care of patients with less dismaying kinds of illnesses generally recognized as necessitating medical services, in or out of a true hospital. In short, customs, traditions, laws, institutional practices, and big investments of tax money all combined to isolate, until very recently, the practice of psychiatry from the rest of medicine. Throughout the United States, over 97.5 per cent of psychiatric beds are in state hospitals. Here in California, however, only 76 per cent of the psychiatric beds are in state hospitals. Fifteen per cent are in private facilities, the largest proportion among all the states. On June 30, 1958, there were 8,600 beds (for both long-term and short-term psychiatric care) in private hospitals, sanitoria and nursing homes licensed by the State Department of Mental Hygiene, as compared with 42,800 beds in state hospitals, 4,200 beds in Veterans Administration hospitals, and 700 beds in general hospitals.[1]

The State Department of Public Health has responsibility for administering the Hill-Burton funds, which match federal and state money with local

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money, for the construction of facilities for psychiatric beds in general hospitals. The local funds may come from public or private sources. According to the standards established for the allocation of Hill-Burton funds for psychiatric units in general hospitals, or in specialized psychiatric hospitals affiliated with general hospitals, the gaps between needs and resources for short-term psychiatric cases is enormous. As of June 30, 1958 (when the state population was 14,025,000), instead of the 7,216 short-term beds required by the standard adopted here in California, only 2,728 beds (or 38 per cent of the standard) were available. In this count were included the psychiatric beds for holding patients pending commitment, but not the psychiatric beds in general hospitals if the unit consisted of less than ten beds.

SHORTAGE OF PSYCHIATRIC BEDS

As of the same June 30, 1958, California was lacking at least 4,900 long-term beds and about 4,500 short-term beds, or a total of about 9,400 psychiatric beds, according to the standards under which the Hill-Burton Act is administered in California. Although we may seriously question the basis of the Hill-Burton standards, it appears that the present count of psychiatric beds for short-term treatment indicates a significant shortage. In the presence of an obvious scarcity of psychiatric beds, particularly for diagnosis and brief treatment, there would appear to be need and opportunity for developments along several different lines: not only for separate psychiatric facilities, but also for psychiatric units in general hospitals; not only for psychiatric beds accommodating adults, but also beds for children and adolescents; not only for 24-hour care, but also for "day-care" hospitals and "night-care" hospitals.

In consideration of the quality, rather than the quantity, of psychiatric inpatient services, certain criteria are equally applicable to specialized psychiatric hospitals and to psychiatric units in general hospitals. Many of these criteria are met by both the specialized hospital and the unit in a general hospital. Why, then, do both the Hill-Burton program and the Short-Doyle Act provide financial aid only to psychiatric services in general hospitals or to specialized psychiatric facilities which are affiliated with general hospitals? Recent trends in psychiatry, together with the authors' experience with the Short-Doyle Act since January 1, 1958, may offer some explanation, although the authors believe that there are several ways, rather than only one way, to develop good hospital facilities for psychiatric patients of all kinds, in all age-groups, from all walks of life, and within a reasonable distance from their homes.

New Trends in Psychiatry

Modern psychiatric advances have demonstrated the disadvantages of isolation and confinement. Recent studies have even suggested that such isolation tends to exaggerate flights from reality and promote anti-social behavior. Estrangement from family and society is now seen as impairing recovery, except in certain unique situations, and even then, generally, estrangement is useful for brief periods only. Certainly, the assumption that the patient cannot take any responsibility for his own recovery has been found to be both false and undesirable in promoting the patient's treatment. Developments in psychopharmacology have permitted those who nurse and treat the psychiatric patient to feel more confidence in the patient and more hopeful about his progress. The behavior of a disturbed psychiatric patient is now more easily, more subtly and less harshly controlled. Consequently, staffs are now able to look at the patient rather than at his problem behavior.

Developments in child guidance and in the private practice of psychiatry have reinforced the professional recognition that the psychiatric patient is responsive to the environment in which he lives and that this environment may either facilitate recovery or intensify illness. Thus, it has become evident that management of the psychiatric patient must often include guidance of the key figures in his natural environment. Wartime experience demonstrated that psychosomatic medicine, in a broader sense, referred to all of medicine, not to just a few physical disorders with more obvious psychogenic features. In this broader sense, medical conditions were seen to have psychiatric overtones and implications, and psychiatric conditions were seen to result from, and to induce, morphologic and physiologic changes in the nervous system and in other systems of the human body. The advantages to physicians and to patients of having ready interchange between nonpsychiatric and psychiatric physicians were repeatedly demonstrated.

The pronounced increase in the number of psychiatrists in private practice (nearly 1,100 now in California) has stimulated the need for psychiatric beds in the communities where patients and their psychiatrists live. Economic factors have often supported the desire to set aside psychiatric beds in general hospitals. But these factors and the medical reasons for promoting locally available psychiatric beds have conflicted with the traditional fears about "wild" psychiatric patients, with major investments in psychiatric institutions separate from general medical facilities, with the chronicity of many mental illnesses, with shortages of psychiatrically-trained nursing and other personnel, and with the failure of pre-payment plans to provide coverage for psychiatric disabilities.[2]

TABLE 1.—*Inpatient Service Costs Under Short-Doyle Act, 1958-59*

County	Population	Number of Psychiatric Beds	Estimated Cost of Inpatient Operation	Estimated Cost Per Bed Per Year	Per Cent of Cost of Local Program Going to Inpatient Service
San Francisco	791,100	59	$ 683,185	$11,579	68
San Mateo	399,100	30	207,597	6,920	37
Contra Costa	370,400	27	128,895	4,774	76
San Joaquin	241,000	32	245,502	7,672	84
Monterey (1959 only)	192,200	15	97,388	6,493	61
Total		163	$1,362,567		

Experience with the Short-Doyle Act

The Short-Doyle Act for Community Mental Health Services, passed by the 1957 session of the California State Legislature, accepted the principles that a psychiatric patient should be treated as close to his living situation as was feasible, and in as close a relationship as possible to the source of the rest of his medical services. The legislation also established two conditions which had the effect of contributing to the assurance that the patient would take some responsibility for his own condition: the requirements that the patient voluntarily seek such treatment, and that he pay a fee consistent with his ability to do so.

In the first full year of operation of the Short-Doyle Act, eleven county programs and one city program were approved. Of these, five were approved for inpatient services. These provided a total of 163 beds for voluntary psychiatric patients. All were located in county general hospitals. Since one of these mental health programs was administratively part of the public health department, the inpatient service was provided in this community by agreement with the county hospital. It was this same program which also planned the smallest approved inpatient service (15 beds), but not because of any minimum size requirements established by the state. It was also this same program which, due to the failure to find a suitable psychiatrist to direct the inpatient unit, did not implement its plan for inpatient services.

The costs of operating inpatient services have varied, reflecting not only the size of the population served, the types of patients admitted and the program emphasis, but also the orientation of the service offered. For example, in Contra Costa County the program provided 27 beds at a cost of $4,774 per bed per year, but the service consisted almost entirely of hospital care and observation without specific psychiatric treatment. In comparison, the San Joaquin County and the San Mateo County programs (of comparable size) provided active treatment with drugs, psychotherapy and planned activity at a cost, respectively, of $7,672 and $6,920 per bed per year. Since capital expenditures are not reimbursed under the Short-Doyle Act, the cost figures available cover operating expenses only (Table 1).

The average estimated operating cost of each bed is $8,360 per year, but in Contra Costa County, with just less than the average number of beds, the cost was only $4,774, while in San Francisco, with twice the average number of beds, the cost was $11,579.

Distribution of Inpatients

From July 1 to December 31, 1958, there were only 148 beds in actual operation. (Monterey County was unable to implement its inpatient service plan during this time.) During this six-month period, 3 per cent of the patients discharged were under 18 years of age, 46 per cent were from 18 to 39 inclusive, 42 per cent were from 40 to 64 and 9 per cent were 65 years old or older. Acute brain disorders were diagnosed in 39 per cent of adult patients (18 years of age and over), psychoses in 31 per cent, personality disorders in 15 per cent, psychoneuroses in 12 per cent, and transient situational disorders in 1 per cent. The acute brain disorders included acute alcoholic intoxications if no other psychiatric diagnosis was given these patients. Chronic brain disorders, mental deficiency, and psychosomatic disorders were all represented, but together totaled only 1 per cent. Also, in 1 per cent of the cases no diagnosis was made or there was no mental disorder.

Incomplete reports of the operation of the first four inpatient services (Table 1) indicated that well over 800 patients were hospitalized in these facilities from July 1 through December 31, 1958. The median length of stay in hospital of the discharged patients varied from five days in San Mateo to 30.5 days in San Francisco.

Of the total of $2,560,879 budgeted the first year by local communities for reimbursable mental health programs, just over 53 per cent was allocated to inpatient services. This represented the provision of inpatient services in communities with a total population of 1,693,800 or 12 per cent of the state's population. The 148 beds that were actually operated with Short-Doyle Act reimbursement were expected to cost $1,265,179, half of which was to be reimbursed by the state. The average total estimated cost per bed day was thus estimated at $23.42.

Values to Be Considered

The local availability of inpatient facilities should promote a continuity of care for the psychiatric patient, the absence of which has long been a serious problem significantly affecting the prognosis of such patients. As psychiatric inpatient care becomes at least as available as outpatient psychiatric care, it can be anticipated that a person in whom a psychiatric disorder develops will seek outpatient care first and will be treated on an ambulatory basis as far as possible. However, when in the course of his outpatient care, or at the time of an initial evaluation of the patient, it becomes clear that admittance to hospital is indicated, the patient should then have access to hospital care, if possible, under the continued medical management of the psychiatrist who provided for the outpatient care.

If the continuity of the single professional person is not possible, then the person responsible for the outpatient care should have the freedom to visit the patient and to participate in a consultative way in the inpatient care of the patient when care in hospital becomes necessary. It is then possible for the patient's return from the hospital to community to be planned and anticipated by his family, his society and his physician from the very moment of his admission to the hospital. Thus, the posthospital career of the patient would be part of the continuum of his prehospital and intrahospital care. If special nonmedical facilities are needed in a community to promote a patient's recovery and his discharge from a hospital, the very fact that the patient is being cared for in a hospital in the same community in which he will be living when his stay in hospital ends, permits the community to be more convincingly informed of the patient's rehabilitation needs.

The Short-Doyle Act also provides that a reimbursable inpatient service must be in a working relationship with, or a part of, a general medical and surgical hospital. This is intended to assure, not only a continuity of care, but also contiguity of care. For some patients this will be expressed as a continuum of medical service in which the psychiatric treatment is a part of the total medical treatment. For other patients it will simply represent the availability of nonpsychiatric, medical services from the same physicians and in the same hospital setting to which the patient would have turned for medical care were he not psychiatrically disabled. Aside from the direct advantages to the patient in such close working relationships between general medicine and psychiatry, there are multiple indirect advantages to be derived from the greater interchange of professional information that results from psychiatrists' becoming active members of the hospital staff.

Special Problems

Not the least of the special problems that pertain to inpatient services reimbursed under the Short-Doyle Act is the tendency of some people to view this method of providing psychiatric hospital care as the only method, rather than as the best method for some patients. In the earlier months of the legislative session which culminated in passage of the bill, and for a few months after it was passed, there was considerable danger that the Short-Doyle Act would be viewed as the panacea for all mental ills. In many respects it represented the newest approach available to the community and to the psychiatric professions for coping with a serious and long unsolved medical problem of a whole population. But in some lay minds the Act took on some of the quality of a "miracle drug." The long awaited opportunity for early diagnosis and treatment, and even for preventive intervention, seemed to have arrived.

With this looking to the "miracle," there was a tendency by some to abandon the less dramatic and the more traditional approaches to the solution of the problems of the mentally ill, the emotionally disturbed and the mentally retarded. State hospital care was considered "old-fashioned" and, indeed, it was suggested that inpatient services of any other kind, or state services of any kind, were the heritage of an archaic past, without constructive application in these days of community psychiatry. The abandonment of state-operated psychiatric outpatient clinics and even of state-operated psychiatric hospitals was seriously suggested. No state facilities were any longer needed; the Short-Doyle (community psychiatry) millennium had arrived.

After a few years of operation, this "panacea" will no doubt be seen in its true light: as a method of providing certain additional mental health resources, but not as an exclusive and miraculous method. For the state hospital system the implications of the Act are indeed serious. If the patients taken care of in state hospitals come to be viewed in the public mind as chronic, long-term patients who are the residue remaining after the application of local, community services, a tendency might develop to reduce public support of state hospital programs. To counteract this, serious professional and public attention will need to be given to determining methods of working with chronic psychiatric patients and with the more seriously disturbed psychiatric patients, so that the state hospitals can indeed become specialty centers for taking care of the more difficult psychiatric problems of the community. This may mean that the traditionally accepted idea of a low level of service at the state hospitals, with inadequate professional staffing and with minimal financial support, will have to be surrendered; the entire cost of the state hospital program may well remain at its present level, even though many fewer patients are taken care of. It may only be through such enrichment that effective programs of care for special problems of the psychiatrically disordered and for the more seriously disturbed psychiatric patients can evolve.

The Short-Doyle Act's 90-day limit on the period a patient may stay in a local hospital under the reimbursement plan has created administrative problems requiring clarification and interpretation. It has been decided that the limitation applies to a single period of hospitalization which extends for 90 calendar days from the date of admission to the date the case is closed, and that a patient may be readmitted any number of times but not to exceed 90 days for each admission. While this permits repeated, short-term stays in hospital for patients who have recurring episodes of brief psychiatric disability, it also might be used to discharge patients administratively at the end of 90 days, only to readmit them. This would permit treatment of chronically ill patients rather than limiting reimbursable local hospitalization to the acutely ill. It is anticipated that, since local communities are paying half the costs, and since there is generally a serious shortage of psychiatric beds, there will be little incentive for local communities to undertake the care of chronic psychiatric patients by this ruse. On the other hand, there is a growing pressure from nonmedical persons in the community and from some professional leaders to make the total psychiatric care of patients a local responsibility. Under such pressure, it may be that some local governments will find it desirable, or necessary, to undertake the extended treatment that would be possible by taking advantage of this loophole in the rules.

Mention has already been made of current and anticipated problems in the relationship of local psychiatric inpatient services with state-operated inpatient services. Attention must also be given to the relationship between these locally-operated inpatient services and private psychiatric inpatient facilities. The Short-Doyle Act permits reimbursement of inpatient services only if they are part of, or affiliated with, general medical and surgical hospital facilities. The Act further limits reimbursement to nonprofit, psychiatric facilities. The specific wording of the Act is:

> "Inpatient psychiatric services in general hospitals and in nonprofit psychiatric hospitals which are affiliated as the psychiatric division of or with a general hospital . . ."[3]

A general hospital is:

> ". . . A hospital in which many different types of patients are cared for on an inpatient basis and shall consist of various departments, such as medicine, surgery and pediatrics. It must conform to applicable state and local laws and regulations. A nonprofit psychiatric hospital shall mean a hospital in which psychiatric patients are cared for on an inpatient basis and which is operated as part of, or is affiliated with, a general hospital."[4]

"Nonprofit" has been defined as "a private corporation or association, no part of the net earnings of which inures, or may lawfully inure, to the benefit of any private shareholder or individual, or a facility owned or operated by a public entity or agency in this state."[4]

The "affiliation" required by the Act has been interpreted as:

> ". . . A working relationship between the psychiatric hospital and one or more general hospitals. This working relationship should be evidenced by a formal written contract or by an exchange of written communications. The relationship may consist of:
>
> "1. Dual management.
>
> "2. Financial relationship, whereby the general hospital has a substantial interest in the psychiatric hospital or vice versa.
>
> "3. Arrangements for interchange of services between the psychiatric hospital and the general hospital, so that the services rendered by either would be readily available to the patients of the other. This, in order that patients in either hospital may be able to obtain any type of service whether it be psychiatric, medical, surgical, etc. In event transfer of a patient from one type of hospital to the other be indicated, such transfer should be readily available to the patient.
>
> "4. Arrangement of staff relationship in such a way that a substantial number of positions on the staff of the general hospital would be on the staff of the psychiatric hospital and vice versa. This should apply to courtesy staff as well as to the paid staff."[4]

It should be noted that these definitions exclude reimbursement of psychiatric services provided in a private psychiatric hospital operated on a profit basis, or of services not affiliated with a general hospital. The operators of many such hospitals have been distressed about the lack of support given by the Short-Doyle Act to their operations, the implied criticism of their operations, and the tax-supported competition with private resources. Nevertheless, the professional quality of programs and services in private psychiatric hospitals has already been enhanced where there is affiliation with general hosital services and facilities. The isolation of psychiatric practice from other medical practice has been intensified by the operation of those private psychiatric sanitariums which have had little or no contact with the rest of hospital practice. Not only has this delayed the necessary integration of psychiatry with the rest of medicine, but it has contributed problems in the total management of psychiatric patients, as well as in the total management of medical and surgical patients who develop psychiatric symptoms.

Serious attention should be given to the Short-Doyle Act requirements for close affiliation between psychiatric services and other medical services in a general hospital, since the standard established here may well be the most desirable standard for all psychiatric inpatient care, whether Short-Doyle-reimbursed, insurance-paid, or privately financed; whether for children, for adolescents, for adults or for the senile. The administrative problems connected with having such affiliations are minimal and, indeed, are insignificant when compared with the professional advantages that accrue.

Short-Doyle Act reimbursement is limited to those direct services which are given patients who are "unable to obtain care privately." The inability to obtain care privately may be by reason either of the unavailability of private professional help or of insufficient funds to pay for such help. As qualified professional personnel become more available, the areas in which qualified professional personnel do not exist become fewer and fewer. However, the high cost of direct psychiatric services means that large numbers of individuals in lower and middle income economic groups continue to be "unable to obtain care privately." As more hospital insurance plans provide payment for all or part of psychiatric hospitalization, an increasing number of patients will have the financial means with which to obtain private psychiatric inpatient service. To this extent, fewer patients will become eligible for inpatient care with the aid of the Short-Doyle Act.

Perhaps the most serious difficulty in the administration of the Short-Doyle Act, especially as it pertains to the development of short-term inpatient facilities, has been the exclusion of state reimbursement for capital expenditures. The state does not share in the costs of building, furnishing or equipping an inpatient facility, or of depreciating buildings and equipment. Unless a local community establishes inpatient services by contract, or establishes inpatient services in facilities which are rented or leased, the cost of buildings and equipment is not shared by the state. This limitation demands that more attention be given to coordinating state reimbursement under the Short-Doyle Act with state and federal reimbursement under the Hill-Burton Act. The system for determining priority of allocations under the Hill-Burton Act is being reviewed jointly by the State Department of Public Health, the State Department of Mental Hygiene and the California Hospital Association. Throughout the country, the allocation of Hill-Burton Funds is based on a standard of five psychiatric beds per 1,000 population in a hospital service area. In California, this standard is broken down into 0.5 bed for short-term cases and 4.5 beds for long-term care. It is assumed that all beds in state hospitals belong in the latter category. Included in the inventory of short-term psychiatric beds, however, are those that are used for holding patients pending their commitment.[5,6] The standard of 0.5 bed for short-term cases per 1,000 population should also be reviewed in light of the fact that a hospital service area may have all the beds for adults that it needs, but have no psychiatric beds for either children or adolescents. In the standard of 0.5 bed per 1,000 population, there is no requirement that some proportion of the beds be available for special patient needs or special kinds of services. Methods of measuring both special needs and specialized services are sorely needed.

TABLE 2.—*Hill-Burton Priorities for Short-Term Psychiatric Beds in Counties with Short-Doyle Act Reimbursed Inpatient Services*

County	Hospital Area	Per Cent of Short-Term Bed Need Met July 1, 1958*	Priority Rating*
San Joaquin	Stockton	0	1
Los Angeles	Torrance/Los Angeles	9/32	19/46
Monterey	Salinas/Monterey	15	32/39
Contra Costa	Richmond	15	36
San Mateo	San Mateo	15	36
San Francisco	San Francisco	53	49

*The needs and priorities indicated in the allocation of Hill-Burton funds were established as of July 1, 1958, while the programs referred to are as of July 1, 1959. This was done in order to reflect community efforts to meet measured bed shortages.

The lack of correlation between California's measurement of priority for psychiatric bed construction using Hill-Burton funds and its use of Short-Doyle Act funds for operating inpatient services is noteworthy. Of the 12 counties that established Short-Doyle reimbursed programs for the fiscal year 1959-60, three had been rated by the Bureau of Hospitals in the State Department of Public Health as having a Number One priority for the development of short-term, inpatient psychiatric services. However, of these three counties, only one developed an inpatient service under the Short-Doyle Act. One county which planned to operate two inpatient services with Short-Doyle Act reimbursement established these inpatient services in two hospital areas: one area had a Number Nineteen priority; the other, a Number Forty-six priority in the California Bureau of Hospitals classification.

Of the 12 counties with Short-Doyle reimbursement in 1959-60, three were in hospital areas in

TABLE 3.—*Hill-Burton Priorities for Short-Term Psychiatric Beds in Counties with Short-Doyle Programs but Not Providing Inpatient Services*

County	Hospital Area	Per Cent of Short-Term Bed Need Met July 1, 1958*	Priority Rating*
Santa Clara	San Jose	0	1
Sonoma	Santa Rosa	0	1
Alameda	Oakland	12	31
Ventura	Ventura/Oxnard	13	32
Kern	Bakersfield	14	35
Santa Cruz	Santa Cruz	51	48

*The needs and priorities indicated in the allocation of Hill-Burton funds were established as of July 1, 1958, while the programs referred to are as of July 1, 1959. This was done in order to reflect community efforts to meet measured bed shortages.

which none of the short-term psychiatric bed need had been met on July 1, 1958. Of these three, only one developed Short-Doyle-reimbursable inpatient services. Six of the programs were developed in hospital areas in which 12 to 15 per cent of such bed needs had been met, yet three of these six programs proposed Short-Doyle-reimbursable inpatient services and three did not. One program involved hospital areas which had met from 9 to 32 per cent of the short-term beds needed; and this Short-Doyle program proposed the establishment of inpatient services. Of the remaining two counties, in which just over half the beds needed already existed, one developed an inpatient service under Short-Doyle while the other did not.

Of the six inpatient services proposed for 1959-60 under the Short-Doyle Act, one was in a hospital area which had not met any of its short-term psychiatric bed needs before the establishment of these services; three were in areas which had 15 per cent of the short-term psychiatric beds needed; one was in hospital service areas which had met between 9 and 32 per cent of short-term psychiatric bed needs; and the sixth was in a hospital service area which had met 53 per cent of its short-term psychiatric bed needs.

For comparison, of the six counties which did not establish inpatient services as part of their Short-Doyle program beginning July 1, 1959, two were in areas in which none of the short-term psychiatric bed needs had been met; one was in an area in which 12 per cent of the need had been met; another was in an area which had met 13 per cent of the need; still another was in an area that had met 14 per cent of its need; and the sixth was in an area in which 51 per cent of the need had been met.

Thus, there appears to be little correlation between the measured need under the priority system established in California for allocation of Hill-Burton funds and the felt need, as indicated by the establishment of inpatient services under the Short-Doyle Act.

Future Developments

In the administration of the Short-Doyle Act, as it pertains both to inpatient services and to any of the other services reimbursable under the Act, the Department of Mental Hygiene has attempted to insure local option and local responsibility. It is the professional conviction of the administrators in the Department that the effectiveness of programs will be directly related to the degree of community involvement and the local public support. It is for this reason that we are interested in maintaining and promoting local responsibility for the development of inpatient psychiatric services. We believe that the provisions of the Act which insure local option must be carefully guarded and nurtured. At the same time, the Department of Mental Hygiene is given the responsibility of controlling the quality of the programs, and this we have attempted to do, not through legislation but through professional consultation.

It is our conviction that, if qualified professional personnel are brought into the programs, they will be able to use professional consultation effectively and they will be at least as interested in maintaining a high quality of program and of services as is the State Department of Mental Hygiene. Thus we have welcomed the latitude given by the Act in defining an inpatient service. We hope to protect the breadth of scope allowed by the Act in providing inpatient services. At the same time, we are greatly concerned with maintaining a high quality of professional staff and of services in the reimbursed inpatient facilities. We hope to achieve this, not through tightly defining personnel standards or the services to be given, but rather through providing skillful, professional consultation to the local program directors and to the professional personnel working in the local programs.

When the state hospitals emerged from their earlier organization as secure refuges for the insane and incompetent, the first steps in transforming these institutions into hospitals consisted of providing more general hospital facilities. Increases in medical personnel, at first, established more positions for physicians, surgeons and trained nurses, long before there were any positions for psychiatrists, except in the top administrative ranks. In their move from asylum-status, our state hospitals were first general hospitals, serving the large populations of the mentally ill and mentally retarded living together in communities the size of small cities. More recently, the psychiatric specialty has, as it were, been added to the medical practices of the state hospitals. We may well envisage the state hospitals of the future as smaller, specialized psychiatric facilities attached to general community hospitals that will provide all the other kinds of medical care needed by psychiatric patients before, during and after their shortest possible periods of hospitalization for any and all kinds of medical care.

The psychiatric inpatient services of the future may represent all the current varieties of organization and financing, with some new variations in these respects. There will be services for emergency hospitalization, short-term treatment, and longer care for the chronically ill or disabled. There will be full-pay, part-pay and no-pay beds in the same or different facilities. Financing will be through private fees alone, insurance plans, voluntary public contributions, taxes (federal, state, and local), or through any combination of these sources of funds. There will be facilities for adults, but also especially suitable facilities for children and adolescents. Inevitably, there will be differences in the qualities of the professional services, apart from variations in the degree of physical comfort or luxury provided. But the goal will be to offer, in physically adequate facilities, sound treatment programs with uniformly high standards to all citizens, regardless of their socio-economic status. This means that, wherever the facilities are located, whatever their auspices and however financed, psychiatric inpatients will no longer be isolated geographically, socially, morally or medically.

2900 Buena Vista Way, Berkeley 8 (Hume).

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Films for C.M.A. Annual Session Film Symposia Requested

The previously successful film symposia presented during the California Medical Association annual sessions will be repeated in 1961, April 30 to May 1.

Daytime symposia, each one to center around one specialty, are now being planned for the physician. General programs for doctors, their wives, nurses and ancillary personnel will be presented during the evenings.

There will be a moderator and outstanding physicians, preferably authors, as discussants on each symposium.

Authors desiring to show their films should notify Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

Deadline: December 1, 1960.

The Antihemophilic Globulin in Plasma

Content of Freshly Frozen Single-Donor Plasma Units Prepared by the Los Angeles Red Cross Blood Center

SAMUEL I. RAPAPORT, *M.D.*, MARY JANE PATCH and JAMES E. CASEY, *Los Angeles*

• A study was made of the antihemophilic globulin (AHG) content of 16 units of freshly frozen, single-donor, type specific plasma prepared by the Los Angeles Red Cross Blood Center for the treatment of patients with coagulation disorders. Three specimens were examined for each unit—(1) a control sample taken from the donor in a separate small tube, (2) a plasma unit sample before storage, and (3) a plasma unit sample after storage for periods up to one year. From a comparison of the AHG content of Samples 1 and 2, it was found that little AHG was lost in preparing the plasma units. From a comparison of Samples 2 and 3, it was found that a moderate AHG loss (averaging about 20 per cent) occurs on storage. This varied unpredictably from bottle to bottle and was unrelated to the duration of storage. Good AHG activity was found in 4 units after storage for one year.

An individual unit of frozen plasma from the Los Angeles Red Cross Blood Center will contain between 50 and 115 per cent AHG activity (with a standard reference sample of plasma taken as 100 per cent).

PLASMA ANTIHEMOPHILIC GLOBULIN (AHG) activity must be raised to about 30 per cent of normal to stop bleeding in the patient with Hemophilia A (AHG deficiency). Since effective plasma concentrates of AHG are still unavailable in the United States, this requires the administration of large quantities of fresh whole blood, fresh plasma or stored plasma prepared by special techniques that prevent the deterioration of AHG.

Two such stored plasma preparations are available. One is freshly frozen, lyophilized, irradiated, pooled plasma which is commercially available as *Antihemophilic Plasma, Irradiated* (Hyland Laboratories). Individual units of this preparation have been found to contain between about 50 and 100 per cent AHG activity.[4,2*]

The second stored plasma preparation is freshly frozen, single-donor, type specific plasma. In Los Angeles this is obtained from the Los Angeles Red Cross Blood Center, which distributed approximately 600 units last year for the treatment of patients with coagulation defects.

The adequacy of the AHG content of single-donor frozen units has been questioned. Pool and Robinson[2] found that 15 of 25 units of frozen plasma examined in San Francisco between December 1955 and August 1956 had only 25 to 50 per cent AHG activity. These units had been stored for less than three months.

Since small variations in the technique of preparing and storing plasma can greatly influence the AHG content, it seemed important to us to check the AHG content of the frozen plasma units being used in Los Angeles. Therefore, a study was set up to measure (1) AHG loss in the preparation of the fresh plasma units, and (2) AHG loss on storage of the units at –20° C. for intervals up to one year.

METHOD

Sixteen units of frozen single-donor plasma were prepared from random donors in exactly the same manner as the plasma distributed for patient use. The AHG content in three plasma samples was measured for each unit. These plasma samples were obtained as follows:

1. *Control tube sample.* After a standard ACD bottle[†] was filled, an additional small tube of blood was taken from the donor. The same anticoagulant ratio was used (1 part ACD anticoagulant plus 4 parts of blood). The tube was spun immediately and the plasma decanted and frozen for assay as a measure of the AHG level of the donor.

2. *Plasma unit sample before storage.* The filled ACD bottles were centrifuged at 1800 r.p.m. for 45 minutes in an unrefrigerated centrifuge whose cups were precooled and balanced with ice water (average water temperature 11° C. before and 24° C. after the spinning). The resultant plasma was aspirated into chilled, evacuated 300 ml. flasks and a

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Submitted June 1, 1960.

[*] The percentage is determined by relating the activity in the unit tested to the activity of a standard reference specimen of plasma.

[†] A bottle containing acid-citrate-dextrose for anticoagulant.

TABLE 1.—*Individual and Mean AHG Levels, Stated in Per Cent of a Standard Reference Plasma**

	Before Storage		After Storage			
Unit No.	Control Tube Sample	Plasma Unit Sample	3 Months	6 Months	9 Months	12 Months
1	74	73	42			
2	130	149	95			
3	118	121	87			
4	111	118	98			
Mean, 1 to 4	106	111	76			
5	83	89		57		
6	125	136		116		
7	....	116		73		
8	100	66		68		
Mean, 5 to 8	102	98		76		
9	108	97			82	
10	101	73			85	
11	146	89			112	
12	144	142			102	
Mean, 9 to 12	122	97			94	
13	111	98				87
14	113	112				104
15	75	78				68
16	145	133				107
Mean, 13 to 16	108	103				90
Mean, 1 to 16	110	102				83

*The 90 per cent confidence limits of our assay are reported elsewhere.[4] Examples are as follows:

Single Observed Value	90 Per Cent Confidence Limits
60 per cent AHG	48 to 75 per cent AHG
100 per cent AHG	86 to 125 per cent AHG

small aliquot removed for assay as a measure of AHG loss in the preparation of the plasma unit.

3. *Plasma unit sample after storage.* The plasma units were stored at –20° C. in chest type freezers at the Los Angeles Red Cross Blood Center. At successive three-month intervals 4 units were thawed in warm water and an aliquot removed for AHG assay.

AHG was measured by a modification of the Pool-Robinson AHG assay described in detail elsewhere.[3] Each sample was run at dilutions of 1 per cent, one-half of 1 per cent and one-fourth of 1 per cent and the mean value of the three dilutions was taken as the AHG value of the sample.

RESULTS

Individual and mean AHG values are listed in Table 1. Log per cent AHG was used in calculating the means because log transformation resulted in a more normal frequency distribution of the data.

The data in Table 1 show:

1. AHG values varied between 74 and 145 per cent in this small series of random donors. (In a group of 30 normal women recently studied in our laboratory the range was between 52 and 133 per cent AHG. These data confirm the known wide range of normal AHG levels in the population.)

2. Except for units 8 and 11, the AHG activity in the control tube samples and in the plasma units before storage was essentially the same. It would appear that the technique of preparing the plasma units rarely results in significant loss of AHG.

3. A moderate loss of AHG activity may occur on storage (average about 20 per cent). This varied unpredictably from bottle to bottle and was unrelated to the duration of storage. The units stored frozen for one year retained good AHG activity.

4. Only one of the sixteen bottles had less than 50 per cent AHG activity after storage. Three-quarters of the bottles had more than 70 per cent AHG activity and in one-quarter of the bottles the AHG activity exceeded 100 per cent.

CONCLUSIONS

These data indicate that the single-donor frozen plasma units distributed by the Los Angeles Red Cross Blood Center contain adequate amounts of AHG for use in patients with Hemophilia A. The units will withstand storage up to one year without excessive loss of AHG activity.

An individual unit will contain between about 50 and 115 per cent AHG activity. The most important factor determining its AHG content is the AHG level of the donor. (Unfortunately, the large quantity of plasma which must be processed precludes the selection of high AHG level donors by a routine AHG assay screening test.)

Because the storage stability of AHG in frozen plasma varies with the technique of preparation and storage, these conclusions apply only to the plasma units supplied by the Los Angeles Red Cross Blood Center.

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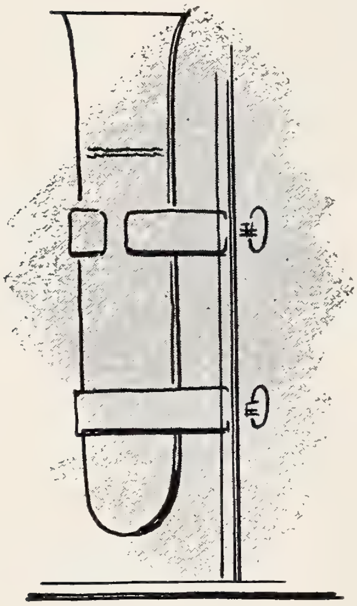

Determining Drug Sensitivity

Use of the Gel Diffusion Method

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• A study was carried out to determine whether the double diffusion gel test when applied to the serum of patients with clear-cut penicillin reactions of various types, might be useful for demonstrating the presence of precipitating antibody. Results did not demonstrate the antibody.

The difference in results with this test obtained by various workers was not explained by the observations in this study.

Other approaches to determination of the mechanism of the penicillin reaction are discussed, and it is noted that the hemagglutination test, newly applied to the penicillin reaction problem, may be useful after further investigation.

ATTEMPTS TO DEMONSTRATE the presence in human serum of precipitating antibody against drugs that produce sensitivity reactions have resulted in conflicting claims. The original adaptation of the gel diffusion test for precipitins was made in 1957 by Muelling and co-workers[24,25] who used an agar-stabilized tube technique. The serum of patients thought to have had a drug reaction was tested and a large number of positive tests were reported. We have used the double diffusion method of Ouchterlony,[28] which is similar in principle but somewhat different in detail. Ouchterlony's technique has been used to demonstrate human serum precipitating antibody in a variety of conditions, including histoplasmosis[14] and thyroiditis,[8] and to differentiate antibodies against such antigens as streptolysin-O,[11] stinging insects,[41] tubercle bacillus protein,[32] trichinella,[46] amaranth-chenopod pollen,[47] house dust[45] and many others.[48]

Drug reactions are becoming more common as more drugs are made available for routine use. Penicillin probably causes 80 per cent of all drug reactions.[15] There is no thoroughly satisfactory test for recognizing penicillin reactions.[12,35,38,39] Skin tests for penicillin sensitivity, whether scratch or intradermal, have caused death and severe anaphylaxis.[21,34] They often result in false positive and false negative reactions,* and there is considerable doubt whether skin tests predict or diagnose accurately,[18,34] although they may be of some help if positive.[9,10,20] Attempts have been made to incubate penicillin with gamma globulin[36] and sulfonamides with gamma globulin[16] and to use these mixtures as complete antigens in skin testing for hypersensitivity to these drugs. There are no reports of the further success of these methods,[18] and at least one earlier reported failure.[9]

Thus, the available methods for distinguishing drug sensitivity are unreliable, misleading and dangerous. A reliable method of demonstrating drug sensitivity in humans would be useful for predicting hypersensitivity, for definitive diagnosis in patients suspected of having had previous reactions, and for distinguishing drug reactions from other diseases. If results with the gel diffusion technique such as those reported by Muelling could be duplicated, an extremely valuable tool would be available for both clinical and research use.

METHOD

Patients were selected from the Palo Alto Medical Clinic if they had reacted to penicillin or other drugs. Penicillin reactors were sought in particular, however, because they are relatively common,[2,27] technique and materials could be standardized if only one drug were considered, and reactions had been documented in the patient's charts in most instances. My own observation or clearly described and recorded observation by another physician was the source of validation of the presence and type of reaction in 68 per cent of the cases studied. The remaining 32 per cent of the patients were included only after interview confirmed the details of their reactions. All patients were personally interviewed for all other information included in this report.

The gel diffusion technique was introduced by Oudin[29] and amplified as the double diffusion plate by Ouchterlony.[28] The method employed in this study is the double diffusion plate as used by the Department of Immunology and Allergy at the Palo Alto Medical Research Foundation.

The agar plates are prepared as follows:

Materials:	Difco Bacto-Agar®	10.00 gm.
	NaCl	4.25 gm.
	Monobasic potassium phosphate	0.19 gm.
	Distilled water	450.00 cc.

Presented before the Section on Allergy at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

From the Department of Pediatrics, Section of Pediatric Allergy, Palo Alto Medical Clinic, and Division of Immunology and Allergy, Palo Alto Medical Research Foundation.

*References 2, 4, 5, 9, 27, 33, 37, 40, 44.

TABLE 1.—*Age and Sex Characteristics of Patients with Reactions*

Age Groups in Years	Per Cent Total Reactors		Total No. Reactors		Reactions to Penicillin Administered						Reactions to Other Drugs	
					Orally Only		By Injection Only		Orally and Injected Concomitantly			
	M	F	M	F	M	F	M	F	M	F	M	F
0 to 10	0	5	0	1	0	0	0	0	0	1	0	0
11 to 20	5	5	1	1	0	1	1	0	0	0	0	0
21 to 30	5	22	1	5	0	1	1	4	0	0	0	0
31 to 40	9	18	2	4	1	0	0	2	1	0	0	2
41 to 50	13	0	3	0	0	0	3	0	0	0	0	0
51 to 60	9	9	2	2	0	0	2	2	0	0	0	0
Total	41	59	9	13	1	2	7	8	1	1	0	2

TABLE 2.—*Allergic Characteristics of Patients with Reactions*

History of	Total Per Cent	Total No. Patients	Reactions to Penicillin Administered			Reactions to Other Drugs
			Orally Only	By Injection Only	Orally and Injected Concomitantly	
Personal allergy	22	5	1	3	1	0
Family history allergy	35	8	1	5	0	2
Personal or family allergy	45	10	2	6	1	1
Previous exposure to drug causing reaction	68	15	3	11	1	0
Other drug allergy	8	2	1	0	0	1
Poliomyelitis vaccine reaction	0	0	0	0	0	0
Insect bite anaphylaxis	0	0	0	0	0	0

Salts and agar are added to boiling water and stirred until melted. The mixture is then placed in tubes in 27 cc. aliquots, autoclaved, and capped for storage. When ready to use, the mixture is melted in a boiling water bath. A 9 cm. sterile plastic Petri dish is readied, into which is first poured 3.0 cc. of 1:1000 aqueous Merthiolate. The melted agar is then carefully added and swirled slowly, then allowed to jell. Wells are cut in the agar with the end of a glass tube approximately 0.8 mm. in diameter. A cluster of wells is made by placing four wells at equal intervals around the periphery of a fifth central well, with the inner edges of the peripheral wells each 5 mm. from the outer edge of the central well. Four such clusters are placed in one 9 cm. Petri dish.

Varying dilutions of serum are put into each central well of each cluster. In this study we used undiluted serum and serum diluted 1:10, 1:50 and 1:100 with normal saline solution. The peripheral wells contained a solution of the antigen (drug) in various dilutions. Drug concentrates were made as follows: Sodium penicillin 500,000 units per cubic centimeter; procaine penicillin 500,000 units per cubic centimeter; potassium penicillin 330,000 units per cubic centimeter; benzathine penicillin 1.2 million units per cubic centimeter; tetanus antitoxin 1,500 units per cubic centimeter; and chloramphenicol 400 mgm. per cubic centimeter. Each concentrate was used as such and, in addition, diluted 1:10, 1:50, 1:100, 1:500, 1:1000, 1:5000, 1:10,000, 1:50,000 and 1:100,000 in saline solution. Thus, each serum concentration was exposed to each of the ten penicillin concentrations. Not all the penicillin-sensitive patients were tested against all the penicillin preparations noted here, but each was tested against the type thought to have been the cause of the reaction, and usually to either the sodium or potassium aqueous forms as well.

The completed plates were kept at room temperature in completely dark, high-humidity containers and read at 24 hours, 48 hours, and 72 hours. All were last read at seven days, 60 per cent were last read at 14 days, and 40 per cent were last read at 21 days.

Tests were made of patients with reactions to oral penicillin alone (3 patients), to injected penicillin alone (15 patients), to oral and injected penicillin concomitantly (2 patients), to tetanus antitoxin (1 patient), and to chloramphenicol (1 patient). Also tested were two patients who had had penicillin but had not had a reaction, and three patients who were currently receiving penicillin with no reaction.

RESULTS

Some general characteristics of the series of patients studied are recorded in Tables 1 and 2. These characteristics resemble certain of those noted in other studies of drug reactions,* suggesting that this is a valid sample even though some of the occurrences within the sample are too few to be significant. Percentages must be interpreted in relation to the total number of occurrences.

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*References 5, 10, 18, 21, 27, 34.

TABLE 3.—*Data Characteristics of Patients with Reactions*

Source	Per Cent Total Reactors	Total No. Reactors	Reactions to Penicillin Administered: Orally Only	By Injection Only	Orally and Injected Concomitantly	Reactions to Other Drugs
Source of information*:						
Personal observation	14	3	0	1	0	2
Clinic chart	54	12	2	8	2	0
Patient's history	32	7	1	6	0	0
Total	100	22	3	15	2	2
Time interval since reaction occurred (in years):						
Years ago:						
0 to 1	40	9	2	4	1	2
1 to 2	18	4	1	2	1	0
2 to 3	5	1	0	1	0	0
3 to 5	14	3	0	3	0	0
5 to 8	18	4	0	4	0	0
8 to 12	5	1	0	1	0	0
Total	100	22	3	15	2	2

*Regarding reaction only (other information by personal interview).

TABLE 4.—*Reaction Characteristics of Patients with Reactions*

Symptoms	Per Cent Total Reactors	Total No. Reactors	Reactions to Penicillin Administered: Orally Only	By Injection Only	Orally and Injected Concomitantly	Reactions to Other Drugs
Type of symptoms:						
Angio-edema, urticaria	77	17	2	12	2	1
Shock	18	4	1	2	0	1
Rash	5	1	0	1	0	0
Total	100	22	3	15	2	2
Severity of symptoms:						
Slight	14	3	0	2	1	0
Moderate	63	14	2	10	1	1
Severe	23	5	1	3	0	1
Total	100	22	3	15	2	2

A total of 27 patients was tested of whom 22 had had clear-cut reaction to drugs, and 5 had had no reaction to any drug. There were 41 per cent males and 59 per cent females, and their ages ranged from 4 to 60 years, with 54 per cent of the patients between 21 and 40 years of age (Table 1). The largest single category consisted of 15 patients who reacted to penicillin given by injection.

Twenty-two per cent of patients had a personal and 35 per cent a family history of major allergic disease (Table 2); and the combined total of those who had either or both made up 45 per cent of the series. There were few reactions to drugs other than those which caused the reactions studied. Twenty-one who had penicillin reactions had had poliomyelitis vaccine within two years of the time of the test, and none had had a reaction. There were no cases of insect bite anaphylaxis.

No previous exposure to the drug causing the reaction was known in 32 per cent of the patients. This lack of history of exposure may have been the result of the patient's failure to remember correctly or of incomplete clinical records. Also, for those who had reactions of the serum sickness type, a history of previous exposure was not expected.

Further characteristics of the patients with reactions are shown in Tables 3, 4 and 5. Forty per cent of the patients had had reactions within the 12 months preceding the test (Table 3). Seventy-seven per cent of the reactions were urticaria or angioedema or both, and 18 per cent were severe shock reactions (Table 4). The reactions were moderate to severe in 63 per cent of the cases. Most patients had had one to six doses of the responsible drug before reaction occurred, and over 50 per cent had symptoms within two days of the last exposure (Table 5).

Table 6 shows the characteristics of the test results. All tests were negative. A total of 50 tests were performed, and almost half of all patients had tests performed for more than one type of penicillin.

DISCUSSION

Failure to demonstrate precipitating antibody in persons with a sensitivity reaction to drugs was not

TABLE 5.—*Reaction Characteristics of Patients with Reactions*

Doses	Per Cent Total Reactors	Total No. Reactors	Reactions to Penicillin Administered			Reactions to Other Drugs
			Orally Only	By Injection Only	Orally and Injected Concomitantly	
Number of doses of drug before reaction:						
1 to 2	68	15	1	12	0	2
3 to 6	24	5	2	1	2	0
7 to 10	8	2	0	2	0	0
Total	100	22	3	15	2	2
Number of days after last dose that reaction began:						
1 to 24 hours	36	8	1	5	0	2
1 to 2	23	5	1	4	0	0
3 to 4	9	2	1	1	0	0
5 to 8	14	3	0	1	2	0
9 to 12	18	4	0	4	0	0
Total	100	22	3	15	2	2

TABLE 6.—*Test Characteristics of Reactors (22) and Nonreactors (5)*

Drug Tested	Per Cent Total Patients Tested	Total No. Patients Tested	Reactions to Penicillin Administered			Currently Receiving Penicillin	No Penicillin, No Reaction	Reactions to Other Drugs	Total No. Tests Performed
			Orally Only	By Injection Only	Orally and Injected Concomitantly				
Procaine penicillin	6	2	0	0	0	2	0	0	8
Bicillin	0	0	0	0	0	0	0	0	2
Sodium penicillin	12	3	1	1	1	0	0	0	12
Potassium penicillin	30	8	1	6	1	0	0	0	8
Procaine + sodium	40	10	1	6	0	0	3	0	....
Procaine + bicillin	0	0	0	0	0	0	0	0	....
Sodium + bicillin	3	1	0	1	0	0	0	0	....
Procaine + bicillin + sodium	3	1	0	1	0	0	0	0	....
Tetanus antitoxin	3	1	....	....	....	....	....	1	1
Chloramphenicol	3	1	....	....	....	....	....	1	1
Total	100	27	3	15	2	2	3	2	32

the result of poor technique. To demonstrate the adequacy of the technique, guinea pig serum (antigen) and rabbit anti-guinea pig serum (antibody) were employed. The result of this test was clearly positive and duplicated results obtained by other workers in the laboratory from which the specimens of serum were obtained. Our experience was not unusual. Mendes,[22] in a study of six patients reputed to have died of penicillin reactions, was not able to find precipitins by the double diffusion technique. Previous investigators were not able to show precipitins in persons who had had reactions to pure penicillin.* Rostenberg and Welch,[37] using a conjugate of crystalline penicillin and human plasma, were unable to show precipitins. Muelling[26] suggested that the penicillin antigen be prepared and allowed to stand in the light for several days, and that no preservative be added to the agar. These directions were followed in repeating the tests with five specimens of serum that had been tested previously, and results were again negative.

The double diffusion plate used in this study might be unsuitable for revealing the presence of precipitin. However, Muelling's technique and the double diffusion technique are the same in theory and essentially the same in practice.[48] They are equally sensitive and equally applicable in similar situations.

Callaway[4] and Welch and co-workers,[44] using a standard fluid technique for demonstrating precipitins, found a faint precipitate at the junction of serum and penicillin in subjects with penicillin reaction and also in one control. They interpreted these reactions as inadequate to prove the presence of precipitin. A similar reaction may have occurred to produce false positives in Muelling's series, but such reactions clearly did not occur in our tests. They may well have been due to the Liesegang phenomenon, thought to be a nonspecific precipitation related to reactant and precipitate concentrations.[42]

It is possible that treatment received by the patient interfered in some way with the precipitin test. If the reaction were dependent on precipitins, however, one would expect to find them afterward, since drug reactions tend to recur on subsequent exposure, regardless of therapy for a previous reaction.

The passive cutaneous anaphylaxis test[30,31] was utilized by us in several studies to determine if precipitins could be demonstrated by this more sensitive method. In the initial tests, precipitins were not demonstrated.

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*References 7, 19, 21, 26, 37, 44.

The infrequent presence of reagin (demonstrated by negative results of direct and passive transfer tests referred to above) seems to eliminate reagin as the cause of drug reactions. It appears that reagin occasionally accompanies reactions but is not the cause of the reaction.

Mechanisms other than these antigen-antibody systems may be involved. Ackroyd,[1] in a classic study, clearly demonstrated antibodies against platelets in a drug reaction to Sedormid® (allyl-isopropylacetylcarbamide). Quinine has been similarly suspect, but the mechanism of its action has not been proven.[6]

Enzyme defects are known to mediate some drug reactions. It has been shown, for example, that primaquine sensitivity is a result of a relative lack of glucose-6-phosphate dehydrogenase in the red blood cells of sensitive patients, and this lack is determined by a sex-linked gene of intermediate dominance. Naphthalene and nitrofurantoin (Furadantin®) cause a hemolytic anemia that is associated with a sulfhydryl defect in the red cell. These and other reports of genetically and chemically determined drug reactions are summarized by Motulsky.[23] It is possible, therefore, that penicillin reactions may be mediated in part by some similar mechanism although there is no definitive evidence to support the conjecture.

Since our work was completed, several studies have appeared using the red-cell agglutination technique to demonstrate circulating antibody in the serum of patients allergic to penicillin. Ley[17] reported such tests first in 1958. Bird and co-workers[3] in 1960 have repeated the survey using serum from patients allergic to penicillin, from patients receiving penicillin but not allergic to it, and from patients neither allergic nor receiving penicillin. They noted positive reactions occasionally and from each of the groups, and concluded along with Ley that this was not a useful method of determining penicillin sensitivity and that the mechanism of the penicillin reaction is not yet explained. Vaughan and Harris in 1960[43] reported a smaller number of patients with a larger number of positive tests. Most recently, Heggie[13] reported studies showing that about 30 per cent of 62 patients with penicillin reactions had positive hemagglutination tests, while about 8 per cent of patients without reactions showed positive tests. He concluded this is a useful test, and further work is indicated. In view of these divergent results and opinions, final comment must await future investigation.

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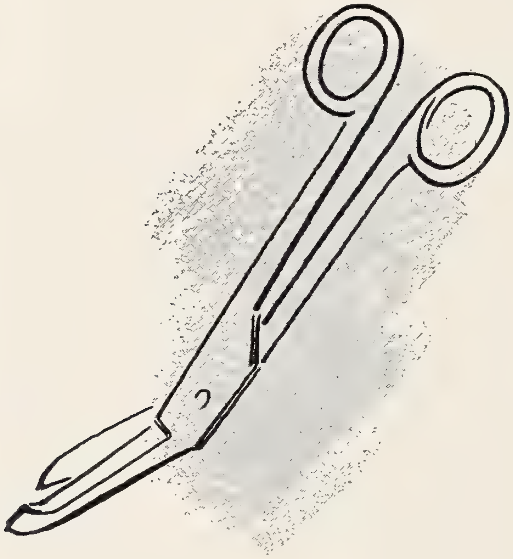

Onychomycosis of the Feet

Treatment with Griseofulvin

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GRISEOFULVIN, a recently introduced orally administered antifungal antibiotic, has been demonstrated to be an extremely effective agent for the treatment of a wide variety of superficial fungus infections of man. The drug was first isolated by Oxford and coworkers[17] in 1939 from *Penicillium griseofulvum* (Dierckx). It is a colorless crystalline neutral compound with an empirical formula of $C_{17}H_{17}O_6Cl$. In vitro studies demonstrated griseofulvin to be fungistatic for a wide variety of fungi pathogenic for man, animals and plants,[1,4,5,6,8] and early investigation was concerned with its possible use as a fungicide in agriculture.[5,6]

Gentles, in 1958[10] demonstrated the effectiveness of orally administered griseofulvin for the treatment of experimentally induced ringworm in guinea pigs. This stimulated great interest in griseofulvin as a possible agent for the treatment of fungus infections in man. Early studies demonstrating the favorable effect of griseofulvin on superficial fungus infections were reported by Riehl,[18,19] Williams and coworkers,[27] and Blank and Roth.[4] These preliminary findings were confirmed by many subsequent investigators.* The essence of these reports is that griseofulvin is at present the treatment of choice in the management of tinea capitis due to a wide variety of organisms, and when properly used has been uniformly successful in achieving cure in all instances recorded to date. It has also favorably influenced the course of the common fungus infections of the palms, soles and nails except for moniliasis and is effective against the majority of fungus infections of the glabrous skin except for tinea versicolor, erythrasma and moniliasis. It is not effective against bacteria or any of the more common systemic diseases caused by fungi. Two possible exceptions appear to be the diseases caused by *Sporotrichum schenkii* and *Nocardia brasiliensis*.[14,24]

• Griseofulvin, a new orally administered antifungal antibiotic which has proved to be effective for the treatment of a wide variety of superficial fungus infections of man, was used in the treatment of 51 patients with infections of the toenails due to *T. rubrum*. Thirty-four of the patients were treated with griseofulvin alone and seven were treated with griseofulvin combined with surgical avulsion of all involved toenails. The remaining ten had bilateral infections, and avulsion was done on one foot but not the other before griseofulvin therapy was begun.

Of 34 patients who were treated with griseofulvin alone, few had complete cure even after prolonged treatment. Some nails showed improvement for a time, then no further gain; some showed no improvement; some showed resistant wedges of infection which penetrated proximally toward the posterior nail fold.

In the instances of surgical avulsion, clinically normal nails regrew during griseofulvin therapy. This simple procedure, with thorough removal of all underlying keratinous debris, apparently did away with foci of possible reinfection.

The results of the study indicated that surgical avulsion of the toenails in combination with griseofulvin therapy is an effective and practical method of treating onychomycosis of the toenails due to *T. rubrum*.

Therapy of onychomycosis of the fingernails has been in general satisfactory when doses in the range of 1 gram daily are given. However, the response of toenails infected with *T. rubrum* has been in general disappointing. In our experience the majority of patients have not achieved cure even where therapy has been continued for almost a full year. In some instances all nails show evidence of initial improvement only to reach a plateau and then have no further improvement despite continued therapy. In others, initial improvement is followed by evidence of relapse characterized by the development of wedges of infected nail extending proximally toward the posterior nail fold. And in still other cases all but one or two nails may show improvement and eventually cure, while the disease in adjacent nails does not appear to respond at all.

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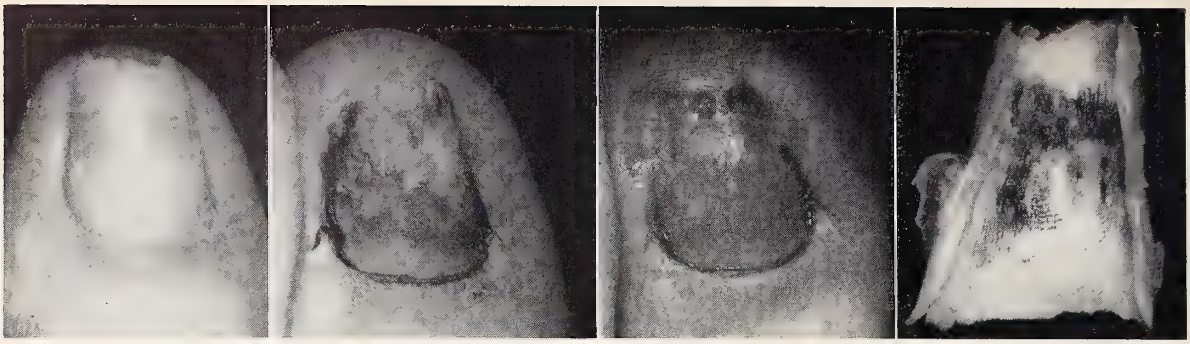

Figure 1.—Technique of surgical avulsion of toenails. *Left to right:* Large toenail before avulsion; nail bed immediately after avulsion of large toenail, with keratinous debris over surface of nail bed; nail bed after thorough removal of keratinous debris by curettage (the material was culturally positive for *T. rubrum*); and undersurface of avulsed nail, showing intact nail plate and keratinous debris clinging to undersurface.

These disturbing observations are particularly important in view of the fact that in the majority of cases of onychomycosis of the toenails in this country the infecting organism is *T. rubrum.* In addition, residually infected toenails obviously serve as foci of reinfection, and further relapses appear inevitable upon discontinuation of therapy. It seems, therefore, highly desirable to employ any adjuvant measures which will increase the probability of achieving complete cure of the disease in all the toenails.

In the treatment of tinea capitis with griseofulvin, it soon became obvious that clipping off the infected portions of the hair and applying topical fungicides were extremely effective adjuvant measures. This was on the basis that griseofulvin is fungistatic not fungicidal and that infected tissue which is not shed or destroyed harbors viable organisms.[16]

The extremely slow and erratic growth of the toenails together with the large accumulation of subungual keratinous debris which may be present provides a situation in which surgical avulsion of the nail plate and thorough curettage of the associated keratinous debris would appear to be highly desirable. The purpose of this paper is to report the value of the surgical removal of infected toenails and associated keratinous debris as adjuvants to griseofulvin therapy of onychomycosis of the toenails due to *T. rubrum.*

MATERIALS AND METHODS

Fifty-one patients with onychomycosis of the toenails were studied. In all cases the infecting organism was proven by culture to be *T. rubrum.* The patients were divided into three groups. Those in Group I, consisting of 34 patients, were treated with griseofulvin alone in dosages varying from 1 gm. weekly to 1 gm. daily for periods of from 14 to 339 days. Group II consisted of seven patients, in whom all involved nails were surgically avulsed before or shortly after the beginning of griseofulvin therapy. These patients received griseofulvin in dosages of from 1 gm. twice weekly to 1 gm. daily for periods of from 23 to 203 days. Group III consisted of ten patients with *T. rubrum* infection of the toenails of both feet. In each of these patients the nails of one foot were surgically avulsed before griseofulvin therapy was begun, while the nails of the other foot were left untouched. These patients received griseofulvin in doses of from 1 gm. twice weekly to 1 gm. daily for periods ranging from 78 days to 269 days.

TABLE 1.—*Average Time in Days to Achieve Percentage Regrowth*

	Group I	Group II
Total patients	34	7
Proportion of regrowth (stated as per cent):		
0 to 24 per cent..	41 days (7-111)	23 days (23)
25 to 49 per cent..	80 days (40-117)	....
50 to 74 per cent..	145 days (65-225)	91 days (90-92)
75 to 99 per cent..	239 days (111-339)	160 days (118-202)
100 per cent............	161 days (96-211)	176 days (150-203)

Note: Figures in parentheses indicate range of number of days from which average is derived.

Group I: Patients treated with oral griseofulvin alone.

Group II: Patients treated with oral griseofulvin plus surgical avulsion of all infected nails.

Surgical avulsion was performed under local nerve block anesthesia with 1 or 2 per cent lidocaine (Xylocaine®). After the nail was freed by blunt and sharp dissection from the posterior and lateral nail folds and the underlying nail bed, it was removed by firm traction. The underlying nail bed and especially the lateral gutters beneath the lateral nail folds were thoroughly curetted to remove all residual keratinous debris, care being taken to avoid damaging the matrix. The steps in this procedure are illustrated in Figure 1, which also shows the significant amount of potentially infectious keratinous debris which remains even after complete avulsion of the nail plate. Culture of the debris in this case was positive for *T. rubrum.*

Patients were observed at weekly or bi-weekly intervals and careful records, including photographs in many cases, were kept of the regrowth of new normal nails, as well as of any evidence of relapse or resistance to therapy.

RESULTS

In comparing the results of the treatment of patients in Group I with those of Group II (see Table 1) it was evident that the time necessary to achieve a given proportion of regrowth was in general less in those patients in whom the toenails had been surgically avulsed, in addition to receiving griseofulvin orally, than in those who received griseofulvin alone. A great individual variation in the rate of nail growth was observed.

In Group III the individual variation between patients was not a factor, since the 10 patients had *T. rubrum* infections of the toenails of both feet but surgical avulsion of the nails on only one foot, the other foot serving as a control. All patients received griseofulvin orally within one week after the surgical removal of the toenails on one foot. The results obtained in the individual patients studied in this manner are summarized in Table 2, and the rate of regrowth of normal nails in each of the two feet is presented in Table 3.

In all patients studied in this manner to date the regrowth of new normal nail at any given time was

TABLE 2.—*Comparison of Avulsed with Nonavulsed Nails in the Treatment of Onychomycosis with Griseofulvin*

Case No.	Age	Sex	Race	Duration of Infection	Dose	Frequency	Duration of Therapy	Total Dose	Results		Comments
									Avulsed	Nonavulsed	
1.	40	F	W	10 years	1 gm.	d	126 d	126 gm.	75% regrowth of normal nail	30% regrowth of normal nail	Still being treated
2.	42	F	W	20 years	1 gm.	d	87 d	87 gm.	Small nails 90% regrowth; large toenail 70% regrowth	Less than 10% regrowth	Some of the nonavulsed nails show streaks of infection almost to posterior nailfold. Still being treated.
3.	35	F	W	Many years	1 gm. 1 gm.	d qod	71 d 35 d	88 gm.	70% regrowth of normal nail	30% regrowth of normal nail	Some of the nonavulsed nails show streaks of infection almost to posterior nailfold. Still being treated.
4.	46	F	W	20 years	1 gm. 1 gm. 1 gm.	biw tiw d	133 d 27 d 108 d	158 gm.	Toenails 100% regrowth; fingernails 100% regrowth	Toenails 50% regrowth; fingernails 80% regrowth	Still being treated
5.	52	F	W	10 years	1 gm. 1 gm. 1 gm.	d biw tiw	21 d 76 d 182 d	111 gm.	100% regrowth of normal nail at 78 days	75% regrowth at 78 days; 90% regrowth at 233 days	At 233 days, previously nonavulsed nails surgically removed. 56 days later they showed 50% new nail growth. Still being treated.
6.	42	F	W	Many years	1 gm. 1 gm.	d qod	29 d 63 d	61 gm.	Small toenails 90% regrowth; large toenail 60% regrowth	Small toenails 75% regrowth; large toenail 20% regrowth	Still being treated
7.	31	F	W	2 years	1 gm.	d	78 d	78 gm.	50% regrowth normal nail	30% regrowth normal nail	Still being treated
8.	28	M	Mex	Many years	1 gm.	d	82 d	82 gm.	Small nails 95% regrowth; large nail 50% regrowth	Small nails 20% regrowth; large nail less than 10%	Still being treated
9.	43	F	W	Many years	1 gm.	d	50 d	50 gm.	Large toenail 30% regrowth; small toenails 50% regrowth	Large toenail 10% regrowth; small toenails 20% regrowth	Still being treated
10.	50	M	W	15 years	1 gm. 1 gm. 1 gm. 1 gm. 1 gm.	biw d biw tiw d	52 d 21 d 63 d 56 d 107 d	185 gm.	100% regrowth at 215 days	40% regrowth at 215 days; 50% regrowth at 269 days	Still being treated

Abbreviations: d=daily; biw=twice weekly; tiw=3 times weekly; qod=every other day.

faster on the toes on which avulsion was done (Table 4).

Not only did the nonavulsed nails fail to regrow as rapidly but in several instances they showed areas of resistant infection extending deep into the apparently new normal nail growth. The problem of persistent infection with resistant areas within the nail is well illustrated by the case of a 28-year-old white man, with a 6-year history of infection with *T. rubrum*. After 215 days of therapy with orally administered griseofulvin alone, resistant tongues of infection could still be seen in the first toe of the left foot extending deeply toward the nail base (Figure 2). The nail was then surgically avulsed and the patient subsequently received griseofulvin 1 gm. daily for 28 days. Then he was outside our observation for five months and received no treatment in that time. When he returned, it was observed that the nail had entirely regrown. The regrowth was new, normal nail, uniform throughout the nail plate, and there was no evidence of resistant areas or reinfection although griseofulvin therapy had been discontinued five months before.

In general, the small toenails show a greater proportional regrowth at a given time than do the toenails of the first toe. Actual measurements, however, indicate that the number of millimeters of regrowth is approximately the same as measured from the posterior nail fold to the free end of the nail and that the proportional difference results from the fact that the large toenail is longer than the smaller toenails.

TABLE 3.—*Average Time in Days to Achieve Percentage Regrowth*

	Group III	
	Avulsed	Nonavulsed
Total patients	10	10
0 to 24 per cent....	....	....
25 to 49 per cent..	50 days (50)	100 days (78-126)
50 to 74 per cent..	81 days (78-106)	255 days (241-269)
75 to 99 per cent..	97 days (82-126)	163 days (92-233)
100 per cent..............	177 days (78-241)	....

Group III: Patients with bilateral toenail infections due to *T. rubrum*. In each patient all toenails on one foot surgically avulsed and nails of other foot remained as control.

TABLE 4.—*Comparison of the Percentage Regrowth of Avulsed vs. Nonavulsed Toenails (Group III) at the Time of This Study*

Patient	Duration of Treatment	Percentage Regrowth		Difference Percentage Points
		Avulsed	Nonavulsed	
1.	126 days	75	30	45
2.	87 days	90—S* 70—L*	10—S&L	80—S 60—L
3.	106 days	70	30	40
4.	268 days	100	50	50
5.	78 days	100	75	25
6.	92 days	90—S 60—L	75—S 20—L	15—S 40—L
7.	78 days	50	30	20
8.	82 days	95—S 50—L	20—S 10—L	75—S 40—L
9.	50 days	50—S 30—L	20—S 10—L	30—S 20—L
10.	215 days	100	40	60

*S—Small toenails.
*L—Large toenails.

DISCUSSION

Accumulated clinical evidence concerning the use of griseofulvin in the treatment of onychomycosis of the toenails due to *T. rubrum* indicates that griseofulvin alone is not effective in completely eradicating these infections. Only three of the thirty-four patients in the present series who were treated with griseofulvin alone had reached clinical cure at the time of compilation of the data for this study. Although many of these patients had not yet been treated long enough for a complete cure to be expected, among those who had been treated for such a period, and in whom a definite indication of the final outcome could be determined, there tended to be several clinical patterns: (1) Early improvement followed by apparent arrest of the progress of improvement despite continued adequate griseofulvin therapy; (2) early improvement followed by the development in one or more nails of clinical relapse characterized by progressive, deeply extending wedges of infection; and (3) improvement in the majority of diseased nails even to the point of complete clinical cure, yet complete or partial failure of response of one or more nails.

The importance of this problem cannot be overemphasized from the epidemiological standpoint, since in well over 90 per cent of the patients with onychomycosis that we have encountered to date, the infecting organism was *T. rubrum*. Further, from the standpoint of prognosis for the individual patient, the remaining foci of infection most certainly constitute a constant threat of reinfection and the development of new lesions upon discontinuance of therapy.

The fact that griseofulvin has not been found to eradicate the disease in the majority of patients treated to date may be attributed to one or more of several factors:

1. The slow and erratic growth of toenails certainly must play an important role in determining the clinical response to the disease. It is estimated that the rate of growth of normal, uninfected toenails is such that they are totally replaced in from six to nine months, but no data are available with respect to the rate of growth of severely diseased nails. It is our clinical impression that infection with *T. rubrum* may in some instances inhibit the rate of growth of the toenails.

2. It has been demonstrated that griseofulvin is actually deposited in hair[11] and the stratum corneum[24] in sufficient amounts to act as a fungistatic agent. Of great clinical importance was the finding that griseofulvin could not be detected in more than minimal amounts in the outer 20 per cent of the stratum corneum,[24] and this might in part account for the persistence of infection and the development of relapses in some instances of *T. rubrum* infection of the palms and soles. The pattern of distribution of griseofulvin in the toenails, the amounts present, the location within the nail and the persistence in situ after initial deposition is unknown, but will most likely prove to be extremely important in de-

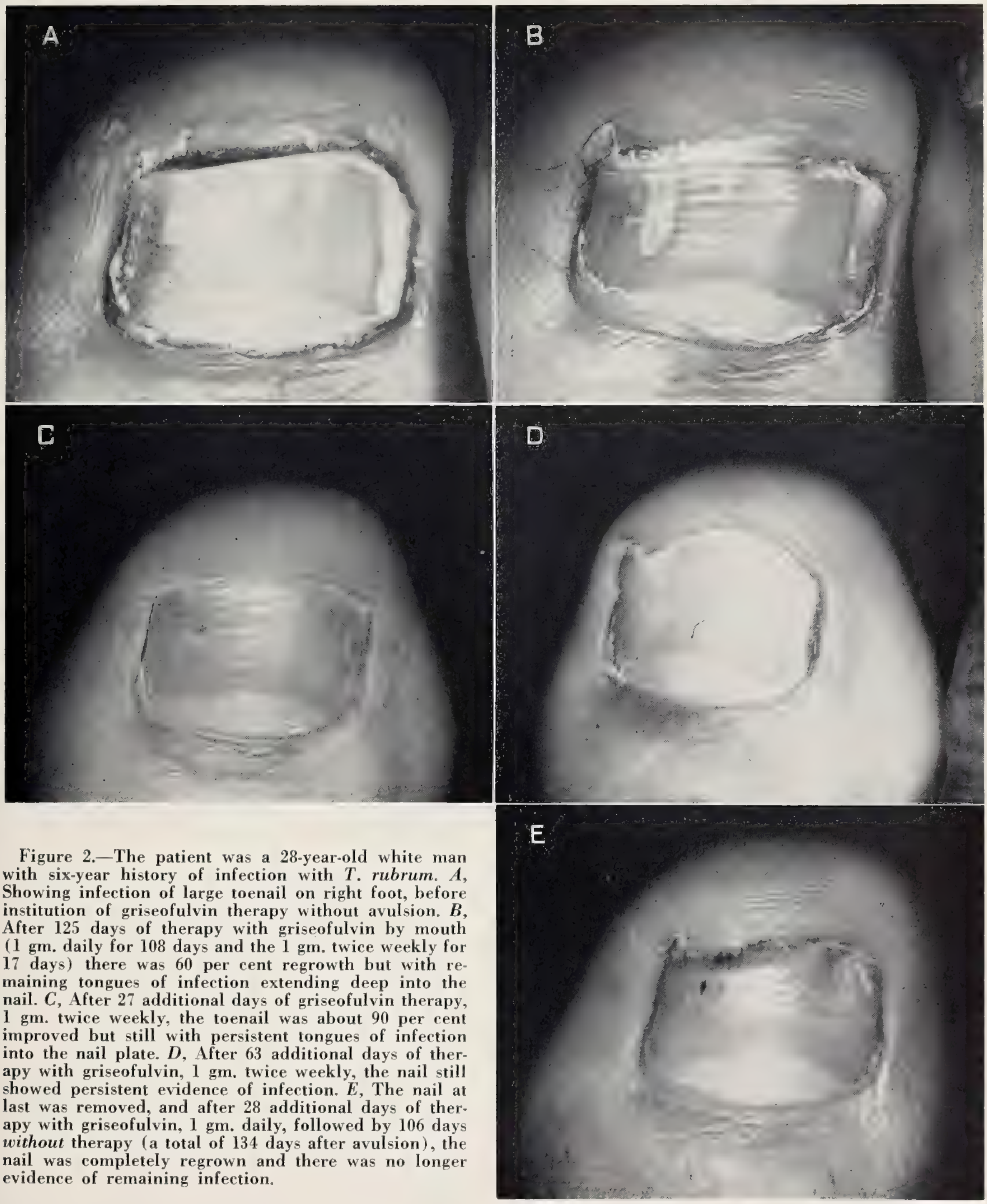

Figure 2.—The patient was a 28-year-old white man with six-year history of infection with *T. rubrum. A,* Showing infection of large toenail on right foot, before institution of griseofulvin therapy without avulsion. *B,* After 125 days of therapy with griseofulvin by mouth (1 gm. daily for 108 days and the 1 gm. twice weekly for 17 days) there was 60 per cent regrowth but with remaining tongues of infection extending deep into the nail. *C,* After 27 additional days of griseofulvin therapy, 1 gm. twice weekly, the toenail was about 90 per cent improved but still with persistent tongues of infection into the nail plate. *D,* After 63 additional days of therapy with griseofulvin, 1 gm. twice weekly, the nail still showed persistent evidence of infection. *E,* The nail at last was removed, and after 28 additional days of therapy with griseofulvin, 1 gm. daily, followed by 106 days *without* therapy (a total of 134 days after avulsion), the nail was completely regrown and there was no longer evidence of remaining infection.

termining the rate of cure. One of the theories explaining the inability to detect griseofulvin in the upper layers of the stratum corneum is that it is perhaps destroyed by bacteria and other organisms. This same possibility exists in toenails that are severely infected and deformed.

3. Although *T. rubrum* plays a major and vital role in initiating these infections, the large accumulations of subungual debris are rapidly colonized by other fungi and bacteria. Possibly these organisms have synergistic effect in perpetuating *T. rubrum* infections, or perhaps they have a role in inactivating griseofulvin.

4. Although an increased tolerance to the drug has been demonstrated *in vitro* this has not been encountered clinically to date.[20,21,22] Still it looms as a possibility in such chronic infections as onychomycosis of the toenails.

5. Other factors, including degree of sweating, occupation, frequency of bathing, use of dusting powder, type of shoes and the frequency of changing shoes and socks are extremely important variables which in the susceptible individual may play a critical role.

6. A peculiar susceptibility involving a unique defect in the host resistance may be postulated as the major factor involved in the inability to achieve complete cure. There is not yet enough data on patients with complete cure and long observation afterward to permit a conclusion as to that hypothesis.

Surgical avulsion of the nail and complete removal of all subungual keratinous debris was considered as an adjuvant of therapy for the purpose of accelerating cure and increasing the incidence of cure in patients with *T. rubrum* infection of the toenails treated with griseofulvin. This was mainly on the basis of the fact that in some instances cure has followed carefully performed surgical avulsion of the nails alone. In addition, it was felt that the operation would mechanically remove a potential source of reinfection at the outset of therapy. Results of the present study strongly support the concept that surgical avulsion of the toenails provides a valuable adjuvant to griseofulvin therapy. In comparing those patients who underwent surgical avulsion of the toenails before or concomitant with griseofulvin therapy (Group II) with those who received griseofulvin alone (Group I) certain clinical impressions stood out clearly. First, the new nails all appeared at essentially the same time and appeared to grow at essentially the same rate. The small toenail regrew in approximately three to four months, but apparently a much longer time was required for the large toenail. The nails appeared firm throughout with no evidence of persistent foci of infection visible. No arrest in the progress toward cure was noted in toes from which the nail had been removed.

The variability of rate of regrowth of the nails among the patients in these two groups was of such a nature that the exact value of the procedure upon rate of return of normal nails could not be determined accurately. However, in the third group of patients who had bilateral onychomycosis but avulsion of the nails on only one foot, the effect of this procedure was unquestionable. In all instances, the nails returned at a more rapid rate on the foot on which avulsion had been performed.

The avulsion procedure was well tolerated by the patients, resulting in disability for only one to three days even when all the nails were avulsed on the same day. The moderate discomfort and time involved appeared to be well justified by the better results obtained with this adjuvant to the recommended regimen of griseofulvin therapy.

The technique of avulsing is of paramount importance. Not only must the entire nail plate be removed, but in addition all keratinous debris underlying the plate must be thoroughly curetted from the nail bed and from beneath the lateral nail folds to remove all possible foci of reinfection.

Finally, it should also be stressed that this procedure does not supplant the necessity for adhering to the traditional basic principles of foot hygiene.

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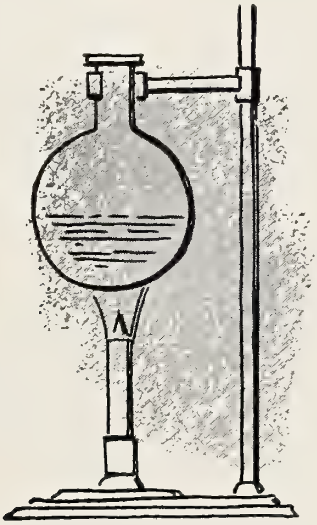

Reactions to Insect Allergens

The Incidence of Response to Testing Among Allergic And Nonallergic Persons

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• Positive reactions to skin tests with extracts of various insects were found to be significantly higher in 200 patients with allergic disease than in 150 nonallergic controls.

Forty-seven per cent of the allergic group had positive reaction to bee, 46 per cent to house fly, 39.5 per cent to moth, 29.5 to ant and 28.5 to aphid. Ant and house fly extract caused the greatest number of severe reactions (4+), with moth second and bee third.

Because extracts of nonstinging insects caused reaction almost as often and as strong as stinging insects, it may be inferred that sensitization is due to inhaled insect particles. There appeared to be no necessary connection between a history of having been stung and a strong skin test reaction to bee protein.

Testing for insect sensitivity appears a good way to get diagnostic information that can enhance the effectiveness of treatment.

For centuries it has been known that in some persons the bites or stings of insects will produce dramatic or fatal reactions. Since reactions of this kind are out of proportion to the amount of insect material injected, it is now recognized that they are allergic rather than toxic, and that there must have been previous sensitizing exposures.

Not until recent times, however, was there recognition that allergic disease of the respiratory tract was sometimes caused by inhalation of insect particles. Since Wilson's paper on sensitization to May flies in 1913,[13] cases of asthma and hay fever have been reported from time to time due to emanations of such insects as sand flies,[7] mosquitoes,[1] bees,[2] house flies,[5] moths,[11] beetles,[9] aphis,[4] and weevils.[3] In most cases specific sensitivity to the particular insect has been shown by direct or passive transfer testing.

Because of the emphasis usually given to such well recognized sensitizers as household dusts, animal danders, grass pollens or food proteins, the possibility seems often to have been overlooked that sensitivity to inhaled insect particles may be an important cause of clinical disease. Feinberg and coworkers[3] in 1956 noted that as many as 65 per cent of a group of patients with seasonal asthma that could not be explained by sensitivity to the usual antigens had positive reactions to tests with such materials as ant eggs, house flies, bees and mosquitoes. Desensitization with the appropriate insect extracts brought relief to 19 of 26 patients.

Weisman and coworkers,[12] after testing allergic patients with extracts of insects of ten orders, concluded that "insect allergy may be a significant cause of seasonal clinical allergy." Perlman[8] reported that half of patients he had observed with asthma and allergic rhinitis, reacted to standardized insect antigens.

If insect emanations can be important allergens in those parts of the country where they are present only in the warmer months, they should be even more significant in the central and southern areas of California where insects can grow during almost the entire year. The number of insects that go through a life cycle each season is astronomical. It has been estimated[10] that the number present at any one time in the topsoil of cultivated land runs from one hundred to two hundred million per acre and as they die and fragment they become a source of airborne insect debris.

Because of the lack of published data on this point for the Los Angeles area, we have undertaken to find the incidence of positive reactions to skin tests with insect extracts in a group of patients with allergic disease and in a comparable control group of persons free of any known allergic symptoms. We believed that a significantly higher incidence of reactions in the patients would indicate that these extracts may be used to detect specific sensitivity to insects, and could be used in treatment according to the classical methods of desensitization.

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MATERIALS AND METHODS

The group with allergic disease was made up of 200 clinic and private patients. The control group was 150 persons with no known symptoms of allergic sensitivity. They were selected to resemble as closely as possible the allergic group. The majority in both groups were between 30 and 49 years of age. Female subjects predominated over male in the ratio of 1.6:1 for patients and 2.6:1 for controls.

Among the 200 patients there were 123 cases of asthma, 107 of nasal allergic diseases, ten of eczema and three of miscellaneous disorders.

Routine tests on the patients (Table 1) showed that 95 per cent reacted to "environmental allergens" such as house dust, animal dander, cotton linters, gums, insecticides and mold spores. Eighty-one per cent were reactive to pollens and 65 per cent to foods. Every patient reacted to at least one of the allergens in the categories named.

The insects used were ants, aphides, bees, house flies, mosquitoes, moths, wasps, and yellow jackets. This selection was dictated partly by availability of material and partly by the frequency of occurrence in the area. Wasps are not as commonly encountered as the others but were included for comparison with the other stinging insects.

Test extracts were prepared from whole insects, as it has been shown by our own work with desensitization to bee anaphylaxis that the allergenic material is found throughout the insect. After defatting with ether, maceration and thorough drying, the weighed powdered materials were soaked for 48 hours in buffered saline solution containing 50 per cent glycerine as a preservative. The extracts were sterilized by Seitz filtration.

Intradermal testing was carried out in the usual manner, using dilutions of 1:5000, and 1:500 of the insect extracts. Reactions were read as one plus to four plus, but, for purposes of recording, only the two plus, three plus or four plus reactions were considered significant.

TABLE 1.—*Results of Allergen Testing of 200 Patients with Allergic Disease*

Class of Allergen	Positive Reactions No.	Positive Reactions Per Cent	Negative Reactions No.	Negative Reactions Per Cent
Environmentals (dust, animals, molds, etc.)	190	95	10	5
Pollens (grass, weed, tree)	162	91	38	19
Foods	130	65	70	35
Insects*	142	71	58	29

*Bee, house fly, moth, ant, aphis, yellow jacket, mosquito, wasp.

RESULTS

The proportions of nonreacting patients and controls and the proportions with two plus, three plus or four plus to each insect extract are given in Table 2.

Among the patients, bee extract produced the greatest number of positive reactions (47 per cent) and house fly extract was second (46 per cent). However, there were more four plus reactions to house fly. The positive reactions to each insect extract among the controls paralleled the incidence among the patients, although at a much lower level.

There were no four plus reactions in the control group to extracts of ant, aphid, fly, mosquito or yellow jacket, and only one each to bee, moth and wasp. The greatest numbers of reactions among controls were to bee and fly. One hundred and twenty-eight (86.4 per cent) of the controls did not

TABLE 2.—*Reaction of 200 Allergic Patients and 150 Controls to Intradermal Tests with Insect Extracts*

Insect		PROPORTION WITH VARIOUS DEGREES OF REACTION (Negative)	(2 Plus)	(3 Plus)	(4 Plus)	Total Positive
Bee	Patients	53.0%	19.0%	18.5%	10.5%	47.0%
	Controls	86.0%	12.0%	1.3%	0.7%	14.0%
Fly	Patients	54.0%	15.5%	16.0%	14.5%	46.0%
	Controls	86.4%	9.3%	3.3%	0.0%	13.6%
Moth	Patients	60.5%	13.5%	14.5%	11.5%	39.5%
	Controls	91.3%	6.0%	2.0%	0.7%	8.7%
Ant	Patients	70.5%	12.5%	12.5%	4.5%	29.5%
	Controls	91.8%	7.5%	0.7%	0 %	8.2%
Aphis	Patients	71.5%	9.5%	13.5%	5.5%	28.5%
	Controls	90.5%	6.8%	2.7%	0 %	9.5%
Yellow jacket	Patients	74.0%	8.0%	11.5%	6.5%	26.0%
	Controls	87.3%	10.0%	2.7%	0 %	12.7%
Mosquito	Patients	77.5%	9.0%	10.0%	3.5%	22.5%
	Controls	93.3%	5.4%	1.3%	0 %	6.7%
Wasp	Patients	78.0%	9.5%	8.0%	4.5%	22.0%
	Controls	91.3%	6.7%	1.3%	0.7%	8.7%

react to any insect extract, whereas 58 (29 per cent) of the allergic patients showed no reactions. Statistical analysis confirmed that the difference between the patients and the controls was highly significant in every instance. It may be concluded therefore that a positive reaction to a test with these insect extracts is a reliable indication of some degree of sensitivity.

Eleven of the patients had previously had general reactions to bee or yellow jacket stings. Nine of the eleven reacted strongly to extract of the same kind of insect that had stung them, but two did not. Among the controls two had experienced such reactions and both had positive reaction to testing with the extract. The incidence of sting sensitivity appeared to be significantly higher among persons with allergic disease.

A substantial majority of both patients and controls could recall one or more stings by bees. Many more were not sure, but thought they must have been stung at least once. It appeared impossible to find any close correlation between having been stung and a positive reaction to bee extract. Many nonreactors had been stung repeatedly.

The fact that insect extracts do cause reaction in some presumably nonallergic people could indicate either that the extracts contain nonspecific whealing agents for some persons, or that these subjects have skin sensitizing antibodies. Since five-sixths of the controls who reacted strongly belonged to families in which there were members who had allergic sensitivity, the latter possibility seems the more likely. (Seeking proof on this point was beyond the scope of the present study.)

The method of natural sensitization to these insect proteins can only be inferred from our results. Unless the patient had never been stung, the high incidence of bee sensitivity might be due partly to the introduction of protein along with the venom. In the case of the house fly the sensitivity might result from the insect's saliva released when probing the pores of the skin. However, in the case of the moth, which presumably rarely breaks the skin, the apparently most logical postulation is inhalant sensitization from the wing scales and other parts of the dried insect. Since sensitivity to moth among our patients was almost as common as to bee and house fly, it is tempting to assume (provided that moth protein is not a much more potent sensitizer) that the greater part of bee and fly sensitivity is also acquired by inhalation.

The results here reported are indicative that sensitivity to insects is present in a large proportion of allergic persons in the Los Angeles area. Because of the extended season when insect particles are in the air, both indoors and out, testing with these materials should be part of the standard procedure for dealing with persons with symptoms of allergic disease. When sensitivity is found it should be treated if it appears to be clinically significant. Furthermore, patients who are not doing well and who have not been tested for sensitivity to insect extracts might well benefit if so tested.

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The Clotting Mechanism

Studies on the Influence of the Temperature of Venous Blood in the Extremities

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• **At the cool temperature (about 86° F.) of superficial venous blood in the lower extremity, blood viscosity is significantly increased, favoring stasis, the clotting mechanism is retarded, and the resulting clots are fragile and adhere weakly to vein walls. These findings may have pertinence in regard to the tendency for thrombi formed in cool vascular beds, such as those of the lower leg, to give rise to emboli.**

THE EXPRESSION "warm blooded" has contributed to the popular misconception that the temperature of blood, like that of the mouth, is maintained within a narrow range of "normal"—37° C. (98.6° F.). This is not the case. In the superficial vessels of the skin and in the peripheral circulation of the extremities the temperature of blood often falls to levels near those of the cool structures through which it courses, a fact known since the time of Claude Bernard.[1]

Just as the blood may be cooled by flowing through a cold peripheral structure, such as the foot, it may also be warmed by passing through a "hot" organ, such as an exercising muscle, which releases a great deal of heat.[2] The blood, then, passively transfers heat according to the laws of thermodynamics, warming the cool structures and cooling the warm structures, thereby serving its important function of homeostasis. The temperature of the blood itself fluctuates widely as it conducts heat to and from the tissues. Because temperature powerfully influences biochemical activity, affecting dissociation constants, pH, viscosities, isoelectric points, solubilities, and especially the rate of enzyme reactions, many interesting questions arise as to the physicochemical properties of blood at cool temperature.

The studies to be discussed here deal with the normal temperature levels in some of the veins of the leg and arm and with the effects that such temperatures have on the blood-clotting system.

EXTREMITY VENOUS BLOOD TEMPERATURE

It has been found that in normal persons engaged in indoor activity the usual temperature of blood in the superficial veins of the lower leg is about 30° C. (86° F.); in the antecubital veins it is about 34.5° C. (94° F.); and deep within the gastrocnemius muscle it is about 36° C. (97° F.).[3] In afebrile bedridden patients the temperatures are essentially the same, except that the level is about 2.5° C. (4.4° F.) cooler in the gastrocnemius muscle of the confined subjects.

The low temperature in the leg would be expected to alter enzyme activity, since the reaction rate of most enzymes falls about 200 per cent with a 10° C. drop in temperature (van't Hoff's rule).[5]

COOL TEMPERATURE AND BLOOD CLOTTING

Since the blood-clotting system consists of a sequence of enzyme reactions, the effect of low temperature on the clotting mechanism was studied.[3,4] At the temperature of superficial venous blood in the lower leg it has been found that whereas the viscosity of blood is increased about one-third, leading to stasis, the rate of clotting is significantly retarded. For instance, the usual Lee-White clotting time at 37° C. (98.6° F.) is 4.5 minutes; at 30° C. (86° F.) it is about 7 minutes. Likewise, the prothrombin time increases from 14.5 seconds to about 20 seconds as the blood temperature is lowered from 37° C. (98.6° F.) to 30° C. (86° F.).

PHYSICAL CHARACTERISTICS OF "COOL CLOTS"

Although the clotting mechanism is retarded at cool temperature, blood does clot. The resulting clots, however, have been shown to be less cohesive than "warm clots," being more fragile when exposed to both compressive and tractive stresses.[3,4] Moreover, acute clots formed in the venae cavae of rabbits are much less adhesive to vein walls when kept at cool temperature than when maintained at the temperature that prevails in the middle of the body.[4]

These studies, then, indicate that at the cool temperature of the superficial venous blood in the lower extremity, blood viscosity is significantly increased,

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favoring stasis, the clotting mechanism is retarded and the resulting clots are fragile and adhere weakly to vein walls. Such findings may have pertinence with regard to the tendency for thrombi formed in cool vascular beds (such as those of the lower legs) to give rise to emboli.

There is a need for the establishment of the biochemical and physiological characteristics of tissues at the cool temperatures of the periphery of the body. It seems reasonable to predict that the physicochemical behavior of many of the constituents of blood may be quite different when the blood is in the heart than when the blood is in the hand.

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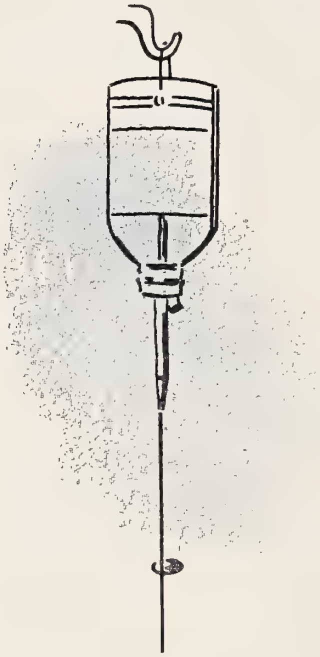

CASE REPORTS

Elevation of Blood Pressure by Intravenous Use of Hydrocortisone in Hemorrhagic Shock

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JOHN E. CONNOLLY, M.D., San Mateo

VASCULAR COLLAPSE secondary to great loss of blood is an emergency of the greatest urgency. Unless blood, fluids or vasopressors are at hand, the patient may die before they can be obtained. Giving hydrocortisone intravenously has been reported to be lifesaving in such situations.[2,3,4]

The use of hydrocortisone intravenously had been empirical until recent animal experiments showed that it is remarkably effective in elevating the blood pressure in hemorrhagic shock if it is administered soon after the shock begins.[1]

In the present case, acute vascular collapse was reversed by the use of intravenous administration of hydrocortisone and the patient lived.

REPORT OF A CASE

A 36-year-old bartender was admitted to Mills Memorial Hospital for treatment of progressive claudication of the lower back, hips and thighs. Symptoms had been present for two years and were most pronounced on the right. An aortogram demonstrated complete occlusion of the right common iliac artery, severe stenosis of the distal abdominal aorta and left common iliac artery, and extensive filling of small collateral vessels. On October 10, 1957, resection of the distal abdominal aorta, the bifurcation and both common iliac arteries was carried out. An endarterectomy was performed on the right external iliac artery to the level of the inguinal ligament. A lyophilized bifurcation homograft, obtained from a large central vessel bank, was inserted to reestablish arterial continuity. Postoperatively there was a return of all the pedal pulses bilaterally, and the patient's course was uneventful.

On the seventh postoperative night, shortly after his second period of ambulation, the patient sat up in bed and complained to a nurse of a sudden sick feeling and of lightheadedness. Then he immediately collapsed into a comatose state, perspired profusely and gasped for air. Within a minute the surgeon, happening by on evening rounds, noted there was no palpable peripheral pulse and that the veins of the extremities were collapsed. No distinct heart beats were audible. The patient was immediately given oxygen by mask and placed in Trendelenburg position. Hydrocortisone (Solu-Cortef®) was at the bedside and 200 mg. was given immediately into the femoral vein.

Within three to four minutes there was evidence of some response, manifested by irrational movements of the extremities and facial twitching. Heart sounds were heard clearly about ten minutes after this catastrophe, and a faint radial pulse returned. The systolic blood pressure was recordable at 60 mm. of mercury. The administration of saline solution by vein then raised the systolic pressure to 70 mm. of mercury in the next five to ten minutes, at which time a vasopressor drug was added to the intravenous solution—levarterenol (Levophed®) 4 cc. of 0.2 per cent solution to 1,000 cc. of 5 per cent dextrose in water, given at rate of 2 cc. per minute. The patient had regained full consciousness, but all superficial vessels still were in partial collapse. For the next 90 minutes, while blood was being crossmatched, the systolic pressure was maintained between 90 and 100 mm. with a vasopressor agent given by intravenous drip.

Since the most likely cause of the shock appeared to be hemorrhage from the operative site, the patient was returned to the operating room. No blood was found in the peritoneal cavity, but there were about three liters of blood, some freshly clotted and some fully fluent, in the retroperitoneal space, which had previously been dissected surgically. The pressure of the large volume of blood had extended the retroperitoneal dissection across the midline to beneath the liver, to the undersurface of the diaphragm on the left and deep into the pelvic cavity. As soon as the peritoneum was incised over the large hematoma, there was a recurrence of hemorrhage from the depth of the wound. Tamponade of the abdominal aorta just distal to the renal vessels almost controlled the hemorrhage, except for a slight amount of back bleeding. In the anterolateral wall of the previously inserted homograft, 1.5 cm. distal to the proximal suture line, there was a tear about 0.5 cm. long and 0.3 cm. wide. It was not at the

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origin of any former aortic branch of the homograft.

A 3 cm. sleeve of the homograft including the lesion was excised and a segment of thoracic artery was used to replace it. The patient tolerated the procedure well. He returned to his former employment and to an active life.

Upon histologic examination of the site of the tear in the homograft, the tissue was observed to be quite thin, consisting almost entirely of media in the area of the lesion. Disrupted medial tissue replaced by fibrin and undergoing organization was present at the margin of the defect. The other areas of the homograft were covered by a thin layer of adventitia.

DISCUSSION

The hemorrhage in this patient was due to a rupture in the wall of the lyophilized aortic homograft. Microscopic study showed that the adventitia, normally the most resistant layer of a vessel wall to rupture, was absent in the area surrounding the tear. Presumably the adventitia had been stripped from this segment during the preparation of the graft. The volume of hemorrhage was greater and more rapid in development than usually occurs with rupture of an abdominal aortic aneurysm because of the existing retroperitoneal cavity which had been recently surgically created.

The acute profound shock in this patient was similar to that observed in dogs subjected to hemorrhagic shock. In experiments on dogs it was noted that large doses of hydrocortisone, if administered intravenously within the first 30 minutes after blood pressure had decreased to 50 mm. of mercury, will uniformly return the blood pressure to 80 mm. or above and maintain it for extended periods.[1] How hydrocortisone does this is not known. There is evidence that normal circulating vasopressors will produce vasoconstriction only in the presence of adrenal cortical compounds. The amount of adrenal cortical compounds available and necessary during hemorrhagic shock may play a role in the apparent action of hydrocortisone in this situation.

It does seem apparent from reported cases such as the present one, and from animal experimentation, that hydrocortisone should be widely available for immediate intravenous administration to combat hemorrhagic shock and to maintain life until measures that take more time can be started. The initial intravenous dose should be 200 mg. If there is no response, up to 500 mg. of the drug may be given safely.

SUMMARY

Vascular collapse due to the rupture of an aortic homograft was successfully treated with hydrocortisone given intravenously. The administration of hydrocortisone was the initial procedure in a series of supportive measures. Hydrocortisone by vein may be life-saving in hemorrhagic shock.

36 South El Camino Real, San Mateo (Harris).

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Anaphylactoid Reaction to Oral Penicillin

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ANAPHYLACTOID REACTION is a severe, shock-like systemic disturbance occurring within thirty minutes after a substance to which a person is hypersensitive enters his body. Among the wide variety of pharmacological and biological substances that can act as antigenic agents is penicillin in any of the many forms in which it is prepared.

The first case of anaphylactoid shock from penicillin administered intramuscularly was reported in 1945.[4] Since that time the widespread use of penicillin has resulted in an increasing number of well documented instances of severe anaphylactoid reaction to this antibiotic. Even penicillin taken by mouth may cause severe[7,10] or fatal[13] anaphylaxis. Since 1953 when the first report of anaphylactoid reaction to ingested penicillin was published,[16] 28 cases have been reported in the English literature.* These were recently reviewed by Batson.[1]

This hazard associated with the use of this usually innocuous drug emphasizes that it ought not be administered without valid reason for its use on sound medical principles. Even when there is no past record of an allergic reaction to penicillin, the occasional serious consequences of using this drug fully justify requiring clear medical indications of penicillin-sensitive bacterial infection before it is prescribed. The present report of anaphylaxis following ingestion of penicillin by a young woman without previously known penicillin sensitivity emphasizes these principles.

CASE REPORT

On November 16, 1959, a 20-year-old woman student came to the Stanford University Student Health Service with complaint of a sore throat. Oral temperature was 97° F., and the pulse rate 72. Beginning coryza and minimal pharyngitis were noted. One slightly enlarged lymph node was palpated at the apex of each anterior cervical triangle. A long-

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Submitted June 13, 1960.

*References 1-3, 5-15, 17.

acting antihistamine and a throat lozenge (containing bacitracin and tyrothricin) were prescribed.

The following morning, thinking she was unimproved, the patient consulted an otolaryngologist, who found essentially the same physical changes. She was given Pen-Vee® tablets (each containing 300 mg. of penicillin) with instructions to take one three times a day. She took the first tablet at 12:05 p.m., then went to the dining room for lunch, which is served at 12:15. Before sitting down to the table she felt prickling, burning sensations all over her body and became so flushed that her roommate exclaimed that she looked as "red as a beet." By that time she felt very ill and returned to her room, some sixty feet away, where instantly she collapsed on the bed.

The residence unit counselor called the Student Health Service at 12:25. By the time I reached her, some five minutes later, and twenty minutes after she had taken the penicillin tablet, her skin was dark red and her eyelids and lips decidedly swollen. She appeared weak and frightened. No radial pulse could be felt. The pupils were dilated, the conjunctivae suffused, the nail beds cyanotic and respirations rapid and shallow. When questioning elicited that the patient had taken penicillin, 0.8 ml. of 1:1000 aqueous solution of epinephrine was promptly given intramuscularly, followed 3 minutes later by hydrocortisone (50 mg. of Solu-Cortef® in solution) and then by 0.5 cc. of 1 per cent solution of metaraminol bitartrate (Aramine® bitartrate) both given intramuscularly. At this time the heart rate, counted by stethoscope, was 160 and the beat was light. The radial pulse could not be counted. The cyanosis appeared to be due to laryngeal edema and vasomotor collapse. There were no rales noted in the chest. As no sphygmomanometer was at hand, the blood pressure was not determined. Within fifteen minutes after metaraminol bitartrate was given, the skin began to become a lighter red and the breathing improved in quality. Gradually the swelling of the eyelids and lips subsided and the suffusion of the conjunctivae cleared. Gradually the heart rate slowed to 88 and the beat became more forceful. A few minutes later a very strong, shot-like radial pulse at a rate of 68 a minute was felt.

A half hour later the color of the skin was normal. The patient relaxed and went to sleep for a few minutes. During the reaction she did not appear to have lost consciousness. At 3 p.m. 4 mg. of triamcinolone was given by mouth. Two hours later the patient said she felt fine. Nevertheless, she was taken to the infirmary for observation. There she ate a hearty dinner. Another 4 mg. tablet of triamcinolone was given at 7 p.m., and at 10:30 p.m. 8 mg. was given. The next morning the patient returned to her dormitory and to her classes. Her cold was gone.

She continued to take triamcinolone, one 4 mg. tablet every six hours for one day, three tablets the next day, two tablets the next, and then one tablet for a day. The patient recovered completely. At no time was there pruritus or urticaria.

It was learned that the patient had received penicillin intramuscularly four times previously between 1948 and 1957. She had never had any manifestation of any allergic diathesis, but a brother was hypersensitive to house dust.

In light of the alarming developments in the present case, and in others reported in the literature, it would seem good routine to observe a patient for 20 minutes after administration of penicillin by any route.

SUMMARY

A healthy young woman who had shown no previous sensitivity to penicillin had severe anaphylactoid reaction to a 300 mg. tablet of penicillin (Pen-Vee®) taken orally.

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Chronic Disseminated Histiocytosis X—Eosinophilic Granuloma of Skin, Mucous Membrane and Bone

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PREVIOUS REPORTS have noted the involvement of multiple organ systems by lesions microscopically identical to those of eosinophilic granuloma of the bone.[1,3,5,7,8] The apparent association of the changes in Hand-Schüller-Christian disease, Letterer-Siwe disease and eosinophilic granuloma led to the development of the concept of Histiocytosis X as a nosologic term to include these three formerly separated disease processes.[4,8] The common basis for all three conditions is an infiltrative, destructive and apparently specific proliferation of atypical histiocytes.

While most investigators were soon convinced of the intimate relation between Hand-Schüller-Christian and Letterer-Siwe disease, some felt that there was insufficient evidence to include eosinophilic granuloma as part of the disease complex.[2] Recent reviews, however, by Kierland[5] and McKay[10] and their coworkers presented additional evidence to support the relationship of eosinophilic granuloma to the other two disease states. They reported eight cases with lesions of the skin, mucous membranes and bone. Diabetes insipidus, which is commonly found in Hand-Schüller-Christian disease, was noted in six of the patients. Microscopically the lesions showed histiocytic proliferation, hemorrhage and aggregations of eosinophils which are typical findings of eosinophilic granuloma. The lesions of Hand-Schüller-Christian disease are essentially devoid of eosinophilic aggregates.

We are here reporting an additional case of eosinophilic granuloma in which there were extensive lesions of the skull, mucous membranes and skin with (apparently associated) pulmonary changes.

It should be noted that eosinophilic granuloma of this type is not related to either the eosinophilic infiltrates in the skin associated with certain allergic and lymphomatous processes or the so-called eosinophilic granulomas of the face.[6]

REPORT OF A CASE

The patient was a 62-year-old white man who had been in good health until, at the age of 49, he noted pain in the left ear, followed by purulent drainage from the left auditory meatus and diminished hearing on that side. In the next few months he became aware of an asymptomatic softening of the bone in the left temporal area. Three years later he noted a roughening of the mucosa lining his left cheek. At that time he sought medical advice and was admitted to Veterans Administration Hospital, San Francisco, where biopsy of the calvarium and buccal mucosa revealed changes diagnosed as eosinophilic granuloma. A roentgenogram of the chest at the time showed a rather pronounced degree of pulmonary fibrosis with numerous blebs bilaterally. The patient was treated with 1,590 roentgens tumor dose (250 kilovolt peak, 15 milliamperes, 0.7 mm. copper half value layer) to the skull lesion and in the next 12 months there was a cessation of the drainage from the ear and radiographic evidence of recalcification of the osteolytic lesion in the skull.

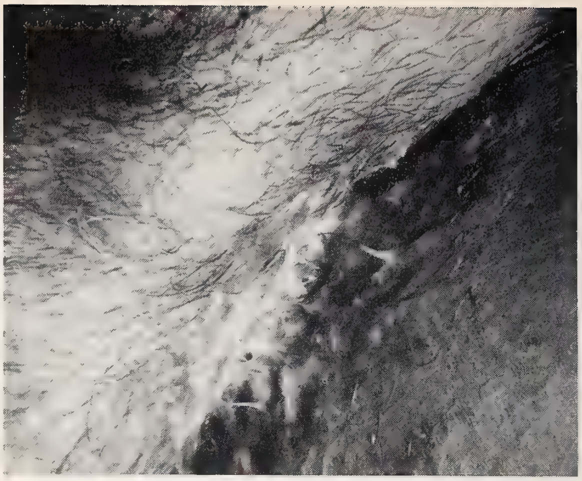

Figure 1.—The lesion in the left inguinal area. The tenacious white exudate is clearly visible.

He remained asymptomatic until age 60, when he noted an erythematous mass in the left inguinal region which increased in size and eventually ulcerated. The lesion persisted despite a variety of topical treatments and several courses of antibiotics given systemically.

He was first seen at the University of California Medical Center, San Francisco, in April, 1959, at the age of 62. At that time he was admitted for evaluation after biopsy of the inguinal lesion showed changes diagnosed as eosinophilic granuloma.

Results of physical examination were within normal limits except for the following changes. There was a 3 cm. by 10 cm. deeply ulcerated, exquisitely tender, indurated lesion in the left inguinal area (Figure 1). It was covered with a white, tenacious, foul-smelling exudate. There was a small satellite ulcer at the superior margin of the main lesion. An irregular, firm, 3 cm. lesion with deep invaginations was noted on the left side of the buccal mucosa (Figure 2).

An irregular, nontender, firm depression was noted in the left temporoparietal region. No bruit or abnormal pulsations were noted. The left tympanic membrane showed a small perforation anteriorly, and auditory acuity was decidedly impaired on this side. The right tympanic membrane was intact but there was a moderate amount of debris in the right external auditory canal. There was some increase of the anteroposterior diameter of the bony

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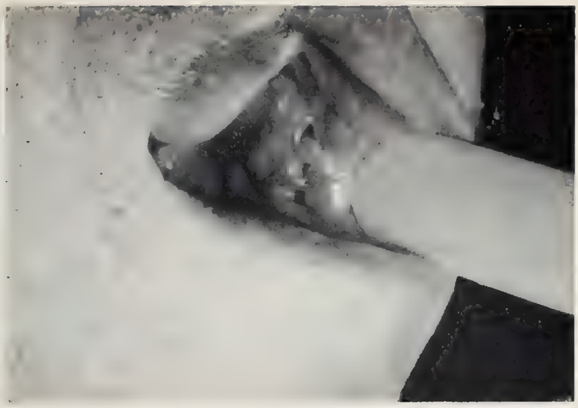

Figure 2.—The lesion of the left buccal mucosa. Deep invaginations into the tumor mass can be seen.

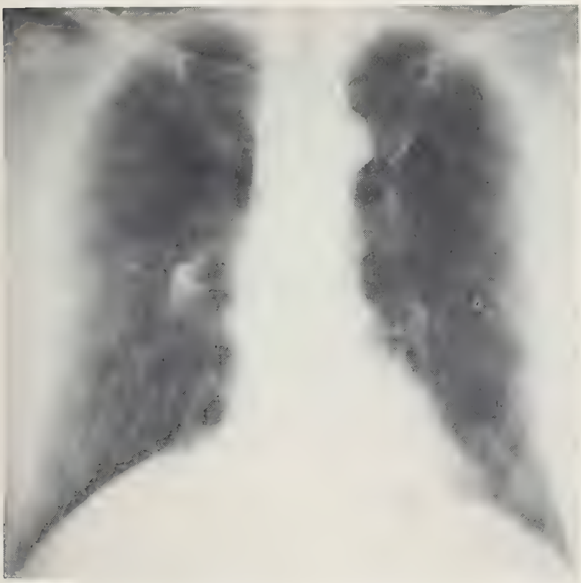

Figure 3.—Roentgenogram of the chest showing diffuse bilateral fibrosis and bullous emphysema.

thorax, and respiratory expansion was limited bilaterally. The chest was hyper-resonant to percussion, and breath sounds were diminished throughout. A few fine inspiratory basal rales were heard.

The hematocrit was within normal limits. Leukocytes numbered 5,500 per cu. mm.—84 per cent polymorphonuclear leukocytes, 10 per cent lymphocytes, 4 per cent eosinophils and 2 per cent monocytes. The sedimentation rate by the Wintrobe method was 22 millimeters in one hour. A bone marrow examination was interpreted as normal. Urinalysis showed a specific gravity of 1.010 and 1 plus albuminuria. On microscopic examination many leukocytes and nonmotile rods were seen. Nonmotile salmonella grew on a culture of urine. Phenolsulfonphthalein excretion was 35 per cent in 30 minutes and a total of 50 per cent in one hour, indicating impaired renal function. A Hickey Hare hypertonic saline test showed no evidence of diabetes insipidus.

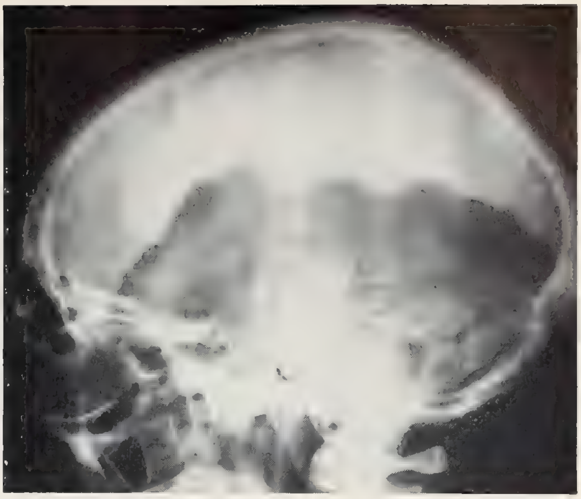

Figure 4.—Roentgenogram of the skull showing the large translucent osteolytic lesion involving the temporal, parietal and occipital bones. The metallic sutures show the site of the biopsy.

An electrophoretic determination of the serum proteins showed a low albumin value (44 per cent) and elevated alpha-2 and beta globulins (12.5 per cent and 19.0 per cent respectively). Alpha-1 and gamma globulins were within normal limits, as were serum electrolytes, cholesterol and alkaline phosphatase, and urinary 17 hydroxycorticoids and 17 ketosteroids.

Results of skin tests for coccidioidomycosis, blastomycosis and histoplasmosis were negative. There was positive reaction to an intermediate strength intradermal tuberculin test. A culture of material from the inguinal lesion grew streptococcus viridans and coagulase-positive micrococcus aureus. Studies for deep fungi and acid-fast bacteria were negative by both direct examination and culture methods.

An electrocardiogram tracing was abnormal but of no characteristic pattern. A roentgenogram of the chest showed pulmonary emphysema and fibrosis with pronounced blebs and bullae (Figure 3). In films of the skull a large osteolytic lesion in the left calvarium (Figure 4) was observed and mastoid films showed diffuse sclerosis of the entire left mastoid area. Roentgenograms of the pelvis showed extensive destructive changes involving the left sacroiliac joint, the left ala and body of the sacrum and the medial portion of the left iliac wing. Lesions were also noted in the lesser trochanter of the left femur (Figure 5).

Histologically the calvarial, buccal mucosal and inguinal lesions showed essentially identical changes. There was decided proliferation of abnormal histiocytes in which occasional mitotic figures were seen. Abnormally large eosinophils were scattered throughout the proliferative areas and in some foci they formed compact masses typical of so-called "eosinophilic abscesses." There were also focal areas of extravasated erythrocytes (Figure 6). In addition

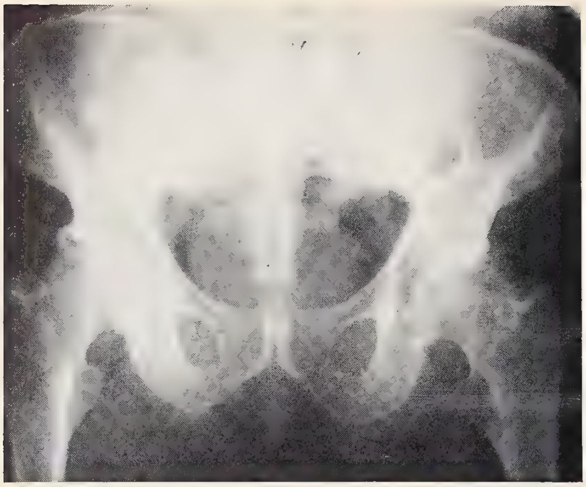

Figure 5.—Roentgenogram of pelvis showing osteolytic lesions in the sacrum, left ischium and femur.

to the foregoing features, the biopsy of the mouth lesion showed thinning of the mucosa over the histiocytic tumor while at the margins of the tumor nonspecific acanthosis was evident. Infiltration and destruction of skeletal muscle was also noted in the buccal lesion (Figure 7).

During the course of this evaluation, the inguinal lesion was treated with potassium permanganate irrigations and topical antibiotic lotions without improvement. He was then given 1,000 roentgens skin dose (250 kilovolt peak, 30 milliamperes, 2.9 mm. copper half value layer) in divided daily doses over a 14-day period. At the end of therapy the lesion had decreased to about half its original size and the purulent element was gone. Pain and tenderness also ceased. However, two months later the ulceration had again attained its original size, appearance and tenderness.

DISCUSSION

Excepting direct extensions from underlying lesions in bone and lymph nodes, the most common extra-skeletal sites of involvement with eosinophilic granuloma are the skin of axillary and anogenital regions, and the buccal mucosa. This distribution is so characteristic as to be of diagnostic use. The patient in the present report is a typical example. Histologically the lesions of the skin, mucous membranes and bone sites were essentially identical and corresponded closely to the structure of the lesions of eosinophilic granuloma reported by other investigators.[5,10] This consisted of infiltration of the tissue with large masses of histiocytes and eosinophils, the latter frequently forming the so-called eosinophilic abscesses. Minute hemorrhagic areas were constant features. In addition, pronounced nonspecific acanthosis was noted in the mucosal lesion.

In several of the previously reported cases, diabetes insipidus was an associated condition. In the present case, despite extensive involvement of the calvarium no evidence of this process was demonstrable.

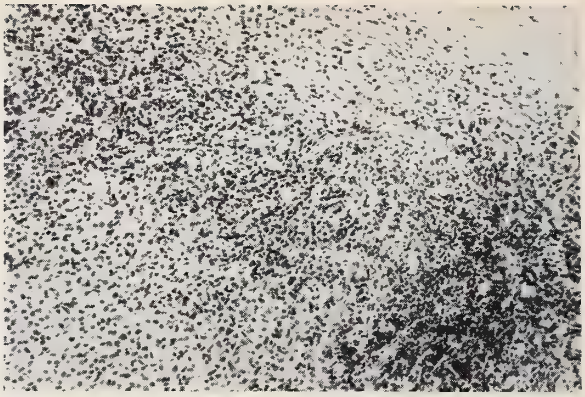

Figure 6.—Photomicrograph of the inguinal lesion showing scattered, darkly staining eosinophils. In the lower right these cells aggregate to form a so-called eosinophilic abscess (×200).

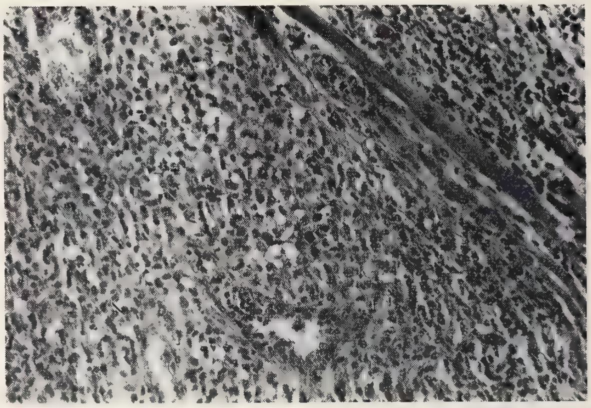

Figure 7.—Photomicrograph of the buccal mucosal lesion showing extravasation of erythrocytes and destruction of skeletal muscle fibers (×480).

Another feature of this case was the decided pulmonary fibrosis and bullous emphysema. Similar changes have been noted by other investigators[1,8,9] and considered to be pulmonary involvement by the disease process. Pulmonary involvement may indicate a less favorable prognosis.

None of the multiple types of therapy tried for this condition, including antibiotics, corticosteroids, adrenocorticotrophic hormone and radiomimetic drugs, have produced outstanding results. Only radiation therapy has met with any real success. In the present case it proved useful for control of the osteolytic skull lesion but not the skin lesion.

The relationship of eosinophilic granuloma to Hand-Schüller-Christian disease and Letterer-Siwe disease seems quite probable, many examples of intermediate forms having been reported in the last several years. Recognition of this probable relationship, however, has not clarified the etiology.

SUMMARY

A case is reported of eosinophilic granuloma involving the calvarium, buccal mucosa and inguinal skin. The diagnosis was established by histologic study of each lesion. Radiologic examinations revealed presumed involvement of the lungs and pelvis. There was no laboratory or clinical evidence of diabetes insipidus. The present case is considered another example of the disease group called Histiocytosis X, which includes those disease entities formerly called eosinophilic granuloma of the bone, Hand-Schüller-Christian disease and Letterer-Siwe disease.

Division of Dermatology, Department of Medicine, University of California School of Medicine, San Francisco 22 (Sullivan).

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Relief of Canker Sores on Resumption Of Cigarette Smoking

RALPH BOOKMAN, M.D., Beverly Hills

Although aphthous stomatitis—"canker sores"—usually takes the form of lesions of the oral mucosa or tongue that heal spontaneously, sometimes the lesions are multiple, confluent, recurrent and resistant to therapy. In that form the disease can torment the patient and dismay the physician who treats him.

The etiology of recurrent aphthae is obscure. Various observers have inculpated viral infection,[1,5,11] allergic sensitivity to foods,[3] hormonal influence (with exacerbation related to menses[2,4]) and trauma from weak organic acids,[8,12] but proof of any single cause is lacking.

Numerous forms of therapy—antibiotics both locally[6] and systemically,[7] hydrocortisone,[10] a variety of topical agents and frequent smallpox vaccinations[9]—have been reported, but none with uniform success.

In these circumstances any observation, however perplexing, that might cast light on the cause or treatment of this disease merits reporting.

In the four cases herein reported, the patients had dramatic and almost complete remission of aphthae as long as they continued to smoke tobacco in cigarettes. In two cases the discovery of the phenomenon was entirely fortuitous; in the other two, in light of this observation, smoking was advised.

Case 1. The patient, a man 58 years of age, had a history of multiple aphthae developing within a week after he stopped smoking 18 years previously. The disease followed a regular pattern: Large multiple and painful lesions would occur, sometimes ten or twelve at once, involving the tongue particularly and making eating and speaking difficult. After about two weeks they would abate, with a period of comparative comfort for three or four days, then the cycle would start again. Up until the time the series of multiple lesions began, the patient had noted a small solitary canker sore about once a month. Several months after the onset of the more severe lesions, the patient started to smoke again. Within 24 hours the pain was relieved and within three days the aphthae disappeared. Thereafter, as long as he smoked he was free of lesions except for about one small solitary ulcer once a month. Several times he stopped smoking again, and each time severe aphthae developed within a few days, then subsided when he resumed smoking. He said the phenomenon apparently was not related to the brand of cigarettes and, as a heavy smoker, he could not estimate the minimum number associated with relief.

There were no symptoms suggestive of allergic sensitivity in his history, nor could questioning elicit any specific inciting or aggravating factors related to the development of aphthae.

Case 2. A 53-year-old man had a continuous series of large, recurrent, multiple and confluent ulcerations of the tongue and mucous membrane of the anterior part of the mouth that began within two weeks after he stopped smoking in 1954. The individual lesions took about three weeks to heal and he was never free of them. Eating and speaking were very difficult because of the pain. The patient started to smoke again in August 1956, and within two or three days the ulcers disappeared. From then on, he had occasional small single ulcers which disappeared in two or three days. He did not again stop smoking. He regularly smoked filtered cigarettes but said he believed that the brand was not a factor. He was unable to estimate the minimum number of cigarettes associated with the control of the ulcers.

There were no other symptoms suggestive of allergic disease nor were there any inciting or aggravating factors during the two years he was affected.

Submitted May 4, 1960.

CASE 3. The patient, a physician 53 years of age, had had recurrent episodes of large, multiple, painful ulcerations of the tongue and oral mucosa, interfering with mastication and speech, since 1943. Individual lesions took almost two weeks to heal. He tried every suggested form of local and systemic medication, including repeated smallpox vaccinations and injections of nicotine, and even had had gold dental fillings changed to silver on the possibility that the metal played a part. No therapy was in any way effective. Although he observed that certain foods would irritate the lesions and increase the pain, the only food that he could certainly and consistently associate with production of ulceration was mushrooms. The patient also had severe allergic rhinitis and for that reason had had complete skin testing for allergens in 1947. His symptoms were perennial and the substances to which his skin reacted were mainly environmental. Results of tests with foods were equivocal, with no strongly positive response to any, including mushroom. Allergic desensitization and environmental control brought about decided improvement of the rhinitis but had no effect upon the aphthae.

In light of the experience in Case 1, the patient, who had not smoked since 1930, was advised to smoke cigarettes. Relief was immediate, dramatic and lasting. The patient found that he had no severe recurrence if he regularly smoked about five cigarettes a day, and he said that although he smoked unfiltered cigarettes as a matter of preference, he believed neither the brand nor the presence or absence of a filter affected the result. Small vesicles developed on the tongue occasionally, but never on the oral mucosa. They disappeared when he smoked more frequently. In 1957 the patient stopped smoking and the ulcerations recurred in two day. They did not subside until some ten days after he resumed smoking.

CASE 4. The patient, 38-year-old man, had been a very casual smoker between the ages of 22 and 33. During that time he had infrequent small canker sores which were never troublesome. He stopped smoking at the age of 33. Two years later severe canker sores developed. They were large and painful, always on the mucous membrane of the mouth, never on the tongue. The ulcers overlapped, and as one would heal another would develop. Speech was so difficult that the patient's work as a minister was hampered. Upon advice he began smoking cigarettes. There was immediate relief and—except for infrequent, small and painless aphthae which lasted only two or three days—no recurrence so long as he smoked regularly. He found that the ulcers recurred in three days if he stopped smoking. Then when he resumed smoking, if there was an early lesion it promptly subsided and did not recur, but a lesion that was fully developed took at least a week to subside. On questioning, the patient could not recall having had any symptoms suggestive of the allergic state, and he knew of no factors which would incite or aggravate the lesions. The relief he obtained was not associated with any particular brand of cigarettes; if he smoked four or five a day, of any brand, he remained free of symptoms.

DISCUSSION

The association of relief of recurrent aphthous stomatitis with the smoking of cigarettes is entirely empiric. I cannot even conjecture a logical explanation of it, whether chemical, metabolic or allergic. The occurrence of occasional aphthae despite smoking suggests that the effect—if effect it be—is suppressive at best. One of the four patients had allergic disease, quite distinct from the oral ulcers, which was not influenced by smoking. Skin tests with acetone-precipitated extract of tobacco prepared in our own laboratory did not show any reaction in any case and should logically not be expected to do so. The four case reports are offered only because they seem to indicate a possible therapeutic relationship between cigarette smoking and recurrent aphthous stomatitis which further experience will support or reject.

SUMMARY

In four cases of painful recurrent aphthous stomatitis in persons who had formerly smoked cigarettes, the disease was dramatically relieved soon after the patients began smoking again.

240 South La Cienega Boulevard, Beverly Hills.

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For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Relative Value Study

Some four years ago the California Medical Association published its Relative Value Study. This was a compilation to show the value relationship that each specific medical, surgical, radiological and laboratory service performed by physicians bears to other specific services in the same category. The values for the various services were expressed in units, not in dollars.

This study, representing the first large-scale review of this type in the country, has subsequently been used by individual physicians, by medical service organizations, by insurance companies and by various departments of federal and local governments in establishing professional fees to be assessed or paid under a large number of beneficiary programs.

Not only did the Relative Value Study show how the value of one service compared with another; it established a standard of nomenclature and coding of services which has now been adopted nationwide by the interests listed above.

No service performed by a state medical association in recent years seems to have the nationwide impact and acceptance that the Relative Value Study has engendered. Its adherents have been legion, its detractors conspicuous by their absence.

This month the Association will publish a new edition of this work. Based on returns made in 1958 by more than 7,000 participating physicians, the new studies will bring the work up to date and reflect various changes from the original which were indicated as necessary.

The updating process takes into consideration, of course, the technical changes which have taken place in the practice of medicine in the past three or four years. Certain procedures which are outdated have been dropped. New procedures developed and generally accepted in the profession have been added. Nomenclature has been refined where indicated. Some relative unit values have been adjusted upward or downward in accordance with current evaluations and practices.

In several sections of the new volume a comparison between the 1957 revised edition and the 1960 copy will, at first blush, make it appear that the studies are contributing directly to the process of inflation. Some unit values will appear to be considerably higher than were shown in the 1957 book. On closer inspection, however, and in accordance with the instructions which will be a part of the publication, the new values will be found to be in line with the former version but assembled in a different manner.

For example, values for anesthesia services have been refigured to show the changing trend in anesthesia from a nursing to a medical service. Where the former values for anesthesia were based solely on a time basis and provision was made for additional visits, the new set of values is developed on the basis of a unit value for availability (which includes necessary pre- and postoperative visits) and on the time consumed in the actual administration of the anesthetic.

In the study on surgery, the old volume listed many unit values on the basis of the surgical procedure and two weeks' aftercare, providing additional unit values for further home, hospital or office visits beyond the two weeks. The makers of the new study realized that medicine is not practiced in that way and so set surgical unit values to represent the procedure itself and the normal period of aftercare. Where one surgical procedure may require only two weeks of postoperative care, another may take six or nine months. The new study will reflect these varying periods of aftercare by assigning to each procedure the current unit value for both the procedure and the follow-up services. Where the difference in unit values might appear extreme in the simple comparison of the old and new editions, the actual change will be little or nothing, since the larger number of units covers a more comprehensive service.

It is true that the values used for surgical procedures have been increased in some instances. Where this has been done, the basis is the information supplied by the 7,000 respondent physicians as to their current practices. Obviously, increased costs encountered in the past few years are reflected in the returns from these practicing physicians.

Physicians, insurance executives, governmental department heads and other "professionals" using the 1960 Relative Value Study will readily recognize the changes in compilation between the old and the new versions. They will read the instructions for use of this large and important work. Others who may glance only at the figures shown for specific values may readily believe that this is an attempt to jack up the costs of medical service. For this latter group, we can only suggest that they be advised to read the whole publication before jumping at ill-advised and baseless conclusions.

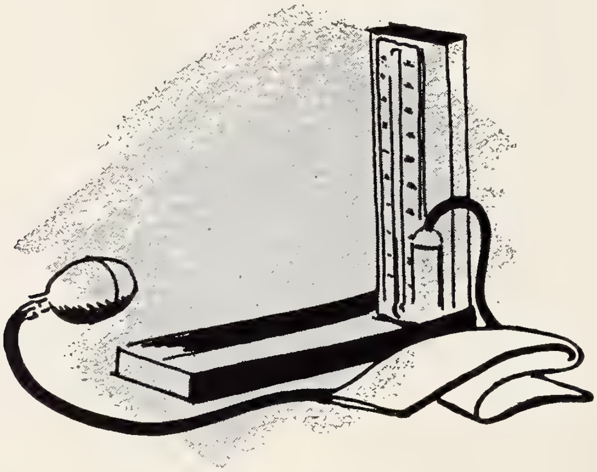
All in all, the new Relative Value Studies seem destined to take their place immediately in the field of medical economics. There is every reason to believe that their use will be widespread and their worth immeasurable for thousands of physicians and others who have need of a set of standards on which to develop a better approach to medical care costs.

The Council of the California Medical Association was quick to recognize the importance and the validity of this new study. It was prompt in approving it and in ordering its immediate production and distribution. Copies will be sent to all members of the Association and made available to others.

Beyond the immediate usefulness of the new Relative Value Studies is the organization which could and did produce it. The combination of a dedicated and thorough committee, several thousands of participating physicians, a competent staff in the Association and the contributions by physician and actuarial consultants has been necessary to bring out this work. All are to be congratulated on a splendid job well done.

In addition, plans are being developed by this same group to provide for a continuing review of each of the four so that it may be kept up to date at all times.

The California Medical Association may well be proud of this newest evidence of its interest in the welfare of patients and all those who serve them. It would be difficult to find a better example of unselfish service for the good of all concerned.



Letters to the Editor...

Cranberries et al.

August 17, 1960

Dear Sir:

I agree with the opinion expressed in a recent letter [Letters to Editor, CALIFORNIA MEDICINE, August, 1960, p. 108] that "The public who are exposed to medical propaganda, although they be adult, usually feel, and have a right to feel . . . about their nation's medical leaders [like a trusting child toward an omnipotent and omniscient parent]." But I think that we doctors have a right to help educate the public toward a more scientific viewpoint, instead of catering to their infantile desires and feelings. Our own scientific training and attitude helps us doctors to suspend judgment on the scary dilemmas presented to us by the atomic scientists. Let's try and bring "the public" up to our level, instead of treating them like dependent, unreasoning, easily frightened children.

S. H. SILVER, M.D.

Los Angeles

I too deplore the cranberry business and the chickens [Letters to the Editor, CALIFORNIA MEDICINE, August 1960, p. 108]. I think perhaps the medical profession has not been too courageous in these—has taken the so common attitude that "there might be something in it, so better not stick your neck out too far." You [Dr. Mark Lewis Gerstle, author of the letter] and I both know that neither aminotriazole nor diethylstilbestrol is carcinogenic in the usual sense of the word. We'd prescribe some milligrams of the former and 1/10 mg. of the latter for long term consumption with zero expectation of cancer. The tumors by the former were produced by the patient's pituitary secretion. The latter has a chemical formula that resembles that of some real carcinogens. But how get the sovereign people to work on their Congress to get a zero-tolerance law amended except by presenting them with the controversy? The unhappiness of having to make decisions when advisors disagree is the price that the sovereign has to pay for the right to run his own state.

I quite agree that the President needs more and better scientific consultants and wiser scientific advice. But the scientific advisor to the people is every scientist who will speak to them (if they'll listen). So the cure for the ill you write of is to have the scientists speak up. And the silver lining in the dark cloud of conflicting opinions is that it inclines the people to listen.

The more security we Americans achieve, the more we value security. We're becoming valetudinarian!

Don't you know that the record of the rocks is clear—progress is made in times of stress.

I'll quote Herbert Hoover: "What do you want, comfort or accomplishment?"

San Francisco

R. R. NEWELL, M.D.

August 27, 1960

Dear Sir:

The August, 1960, issue of CALIFORNIA MEDICINE devoted to nuclear fallout brings up the question which should occur to all physicians who do obstetrics.

In an area such as the Los Angeles-Orange counties area, what would happen to those pregnant women who were at or near term, should the bomb hit this area? Hospital space would be taken up with the critically injured, and the uninjured would most probably be denied the use of hospital facilities.

The education of the public to use the physiologic squatting position for delivery would make such a situation much easier to bear for the women concerned.

A committee from the A.M.A. and the U. S. Public Health Service which included Dr. Paul Hodgkinson, obstetrician in chief of the Henry Ford Hospital in Detroit, has written a do-it-yourself pamphlet for such an emergency. This pamphlet is, I am told, available probably through the U. S. Public Health Service. It would seem that with an actual bombing, it would be a little late to attempt to distribute such a pamphlet. These pamphlets should be in the hands of women right along with the first packet of sample prenatal vitamines.

It is not very probable that women in general would use such information to deprive physicians in general of income. This is the only reason that I can think of which would be brought up opposing such distribution of this information. Giving the information now may make the plight of some women much more secure were the attack actually ever made.

Congratulations on the excellent articles on the nucleus of the atom, which could affect us all.

Yours truly,
FORREST H. HOWARD, M.D.

Garden Grove, California

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft of the Minutes of the 462nd Meeting of the Council, San Francisco, St. Francis Hotel, September 10, 1960.

The meeting was called to order by Chairman Sherman in the Borgia Room of the St. Francis Hotel, San Francisco, on Saturday, September 10, 1960, at 7:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Speaker Doyle, Secretary Hosmer, Editor Wilbur and Councilors MacLaggan, Todd, Quinn, O'Neill, Kirchner, O'Connor, Shaw, Rogers, Murray, Davis, Miller, Sherman, Campbell, Morrison, Anderson and Teall.

Absent for cause, Vice-Speaker Heron, Councilor Wheeler.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan, Bowman and Tobitt and Drs. Batchelder and Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Messrs. Read, Salisbury and Fraser of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Grove of Monterey, Brayer of Riverside, Dochterman of Sacramento, Nute of San Diego, Neick of San Francisco, Thompson and Pearce of San Joaquin, Wood of San Mateo, Donovan and Colvin of Santa Clara, Funk of Solano and Blankfort of Marin; Dr. Malcolm Merrill, State Director of Public Health; Dr. Daniel Blain, State Director of Mental Hygiene; Mrs. Eunice Evans of the State Department of Social Welfare; Messrs. Paolini, Wahlberg, Nyren and Heller of California Physicians' Service; William Rogers of the California Academy of General Practice; Angus Crawford, actuary; Drs. Dean Hoskins, Donald Harrington, Elmer Gooel, Thomas Elmendorf, Henry Gibbons, III, Homer Pheasant, Merrill Sisson, Shelby M. Hicks, Eugene Hopp, John Schaupp, Malcolm Watts, J. Philip Sampson and others.

The chairman announced the resignation of Councilor Byron Gifford for reasons of health and, on motion duly made and seconded, it was voted to accept the resignation with regret and with best wishes for Dr. Gifford's improvement in the state of his health.

The chairman announced that the delegates of the Fourth District had selected Dr. James W. Dalton of Santa Barbara to succeed Dr. Gifford. On motion duly made and seconded, it was unanimously voted to appoint Dr. Dalton as Councilor for the Fourth District, to serve until the 1961 Annual Session. (Dr. Gifford's term of office ran until 1962.)

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 461st meeting of the Council, held July 9, 1960, were approved.

2. *Membership:*

(a) A report of membership as of September 7, 1960, was presented and ordered filed. It was announced that the membership will entitle the Association to an additional delegate to the American Medical Association in 1961.

PAUL D. FOSTER, M.D.	President
WARREN L. BOSTICK, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
SAMUEL R. SHERMAN, M.D.	Chairman of the Council
RALPH C. TEALL, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
DWIGHT L. WILBUR, M.D.	Editor
HOWARD HASSARD	Executive Director
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(b) On motion duly made and seconded, 88 delinquent members whose dues had been received, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 22 applicants were voted Associate Membership. These were: Gerard Chase, Kenneth F. Ernst, Helen May Safford, Alameda-Contra Costa County; Ray H. George, Leonard Jason Nevis, Francis J. Sullivan, Nancy Telfer, Los Angeles County; Wm. Brown Beach, Jr., Paul H. Guttman, Edward Rudin, Sacramento County; Joseph W. Dennis, San Bernardino County; Paul Freeman, Alan Goldfien, Pauline R. Langsley, San Francisco County; Bela Krausz, John LeValley, Rachel Rafferty, Cesare Reyneri, Santa Clara County; Robert B. Radl, Santa Cruz County; Richard C. Bartman, Sonoma County; Samuel M. Ramer, Stephen E. Stephens, Ventura County.

(d) On motion duly made and seconded in each instance, three applicants were voted Retired Membership. These were: Herbert O. Bames, Los Angeles County; John W. Warren, San Diego County; Wilhelm Waldeyer, San Francisco County.

(e) On motion duly made and seconded in each instance, reductions of dues for two members were voted.

3. *Unfinished Business—Conference of County Officers:*

Councilor Todd, chairman of a special committee, reported that February 11, 1961, and Los Angeles had been approved by the committee as the time and place of the 1961 Conference of County Society Officers. The committee recommended that five representatives of each society be invited, to include the president, president-elect, secretary and two others, preferably members of the House of Delegates. On motion duly made and seconded, these proposals were voted approval.

Dr. Todd also presented a proposed program for the conference, including principally out-of-state speakers representing various organizations and built around a theme of the socio-economic prognosis of medical practice. On motion duly made and seconded, it was voted to approve this program in principle, to leave the timing of the conference flexible and to provide for a request to the Finance Committee if additional funds are required.

4. *Commission on Medical Services:*

Chairman Harrington of the Commission on Medical Services discussed the development of the current review of the Relative Value Studies and further discussed the proposal that dual levels be developed as differentials in the services of specialists and non-specialists. On motion duly made and seconded, it was voted that continuing study be given to the matter of duality, that consideration be given to such a program developed in Santa Clara County and that an ad hoc committee be appointed for such study.

Dr. Dean Hoskins, chairman of the Committee on Fees, presented the revised version of the Relative Value Studies, based on returns from 7,000 physicians which had been subjected to both actuarial and consultant review. On motion duly made, seconded and voted, the studies as presented were accepted and Dr. Hoskins and the staff were instructed to proceed with the production and distribution of a new publication. It was noted for the record that Councilor O'Connor voted for acceptance but disapproved the use of consultants in the compilation of the values shown.

On motion duly made and seconded, it was voted to instruct the committee to develop plans which will permit a continuing review of these studies for the purpose of maintaining them on an up-to-date basis, the committee to report on such plans at the earliest possible date.

5. *State Department of Mental Hygiene:*

Dr. Daniel Blain, State Director of Mental Hygiene, gave a detailed report on the program and plans of his department. He reported that the department is currently operating on an annual budget of about $140,000,000, that it has 20,000 employees, or 20 per cent of the total employees of the state, that there are 47,000 beds in state hospitals, the daily census is about 45,000 patients and the yearly total about 60,000 patients. By way of comparison, New York State operates 86,000 beds, handles about the same number of annual admissions and discharges and costs run about $250,000,000 annually.

Dr. Blain stated that about 60 per cent of all psychiatric care in California is now handled by public agencies and 40 per cent by private resources. The department, he said, is working to reduce the state total to about 50 per cent of the overall figures and encourage private facilities to handle a like amount.

The department, he said, is operating about $2,500,000 in research a year, and is faced with a shortage of physicians, nurses and other trained personnel. He expressed the belief that with adequate personnel the department could continue to serve the growing population of the state without the construction of additional hospitals.

Dr. Blain distributed an outline of the department's program and asked general approval of it as well as continued cooperation of the Committee on Mental Health. It was agreed to approve these requests.

On motion duly made and seconded, it was voted to have the chair appoint a committee to meet with Dr. Blain and local mental health officers in Sacramento on September 29. Dr. Sherman appointed Drs. Teall (chairman), O'Connor, Knox, Auerback and Kilroy, together with Mr. Hassard and other staff members.

A report from Dr. Auerback was received for information only.

6. *State Department of Public Health:*

Dr. Malcolm Merrill, State Director of Public Health, reported that 247 poliomyelitis cases have been reported this year, compared with 196 at this time in 1959, and that ten deaths have been recorded, compared with four last year. He asked that the ad hoc committee on poliomyelitis be reactivated in light of the anticipated approval of the live virus method of prevention. It was agreed that this committee be reactivated.

Dr. Merrill also reported that in the past two years outbreaks of influenza have occurred before public health authorities have been able to recommend preventive measures. The U. S. Public Health Service, he said, will soon recommend the use of flu vaccine for selected groups who display a number of clinical conditions.

Federal funds for hospital construction will amount to about $8,333,000 this year, Dr. Merrill said, a new record high. The Hospital Council of the department will meet in San Francisco on October 6 and 7 to allocate these funds and state funds.

In response to a question, Dr. Merrill replied that the Cancer Council has held three meetings, has outlined plans for investigational and other procedures and has now made demand on one clinic group in the southern area for clinical records and other detailed information in support of the claims made by the group. Such demand, he pointed out, is the initial legal requirement in investigating the clinical efficacy of claimed methods of therapy in cancer.

7. *State Department of Social Welfare:*

Mrs. Eunice Evans of the State Department of Social Welfare discussed the provisions of the Mills Bill, recently passed by Congress and awaiting the President's signature, which is expected. Under one of the two parts of the bill, she said, it appears to be possible to increase funds for medical care of OAS recipients from the present level of $8 a month to $12 a month, effective October 1 without the need of state legislation. The department, she said, is considering the provision of eye services, including eyeglasses, and dental and prosthetic devices as added services to this group by the use of these funds.

The second part of the bill, Mrs. Evans said, will require state legislation and, with state matching funds, will make as much as $12 a month per person available for medical services to a large group of those not now drawing public assistance but in the near-needy classification as to medical care.

Mrs. Evans also reported that continuing study is being given to the health evaluation studies planned by the department.

Dr. Quinn, chairman of the liaison committee to the department, and Dr. Sherman reported that the committee has discussed these problems with Mrs. Evans and the department and has also discussed the feasibility of instituting pilot programs using a prepayment program under California Physicians' Service for beneficiaries of the department.

8. *California Physicians' Service:*

Dr. Morrison reported that California Physicians' Service has a current membership of 780,000, exclusive of federal employee families, who are estimated to total about 151,000. Operating costs, he said, are running 10.3 per cent of dues income, a reduction from 11 per cent plus a year ago. Dr. Morrison also reported that plans are under discussion which would provide for experimental programs in the fields of deductible hospitalization plus out-patient laboratory services and for psychiatric care.

9. *Commission on Public Policy:*

(a) Dr. Kilroy, chairman of the commission and chairman of the Committee on Legislation, reported that discussions had been held on two resolutions from the 1960 House of Delegates which had been referred to the commission by the Council. On Resolution No. 23, relating to exemption from legal liability for members of tissue and other committees, it was recommended that the intent of the resolution be activated. On motion duly made and seconded, it was voted to do so. On Resolution No. 37, relating to the uses of hypnosis, it was regularly moved, seconded and voted to refer the subject for further study to the Committee on Legislation and the Medical Review and Advisory Board.

Dr. Kilroy also called on Mr. Read and Mr. Salisbury to discuss the November election procedures.

(b) For the Committee on Public Relations, Dr. Malcolm Watts, chairman, reported that the committee had adopted three basic policies, as follows: (1) to create a public image under which the public would "listen to organized medicine in the same way a satisfied patient listens to his doctor," (2) to develop an indirect approach on matters of socioeconomic messages, and (3) to assist county societies to develop local programs aimed at creating a favorable public image of the profession. On motion duly made and seconded, these policies were voted approval.

Dr. Watts also discussed the plans made for television presentations, stating that the proposed series "Doctors at Work" would present everyday practices and work in socio-economic messages and that consideration was being given to producing direct socio-economic programs planned for paid station time.

Dr. Watts reported that the director had been directed to provide for an allocation of responsibilities among the personnel and, if needed, arrange for additional personnel and outside consultation. On motion duly made and seconded, these directives were approved.

On the committee's recommendation, it was regularly moved, seconded and voted to urge California Physicians' Service to integrate socio-economic messages in its advertising and to emphasize the "Doctors' Plan" aspect of its service.

The committee also recommended that a mailing list of the home addresses of members be prepared. On motion duly made and seconded, it was voted to approve this proposal in principle and refer it to the Finance Committee for implementation.

The committee also suggested that the Council determine the extent of emphasis which should be placed at this time on the medical problems of the aging population. An ad hoc committee appointed to develop a set of principles on this subject presented, at a later hour, a set of principles which, on motion duly made and seconded, was voted approval.

Dr. Watts also reported that the committee was considering establishing an award for outstanding news reporting on medical matters. He also stated that the committee would like authority to call on the Committee for Emergency Action in case of need. No action was taken on this request.

Mr. Clancy reported on the Public Relations Conference recently held in Chicago by the A.M.A. and also reported that the A.M.A. is preparing a packet of material for the use of students who are preparing essays or debate material in their school courses.

10. *Committee on Committees:*

Dr. Bostick recommended that the composition of the new Committee on Dangerous Drugs under the Commission on Public Agencies be as follows: William F. Quinn, Los Angeles, chairman; Norman A. Gale, San Diego; Edward R. Bloomquist, Glendale; Edward Jewett, Santa Rosa; Clinton H. Thienes, Los Angeles, and Ralph W. Weilerstein, San Francisco. On motion duly made and seconded, it was voted to approve the appointments and to establish staggered terms of one, two and three years.

Doctor Bostick also presented nominations to fill vacancies on several other committees, all of which were voted approval. Among these were Dr. Wilbur Rogers to succeed Byron Gifford, resigned, on the Committee on Committees, and Dr. J. Norman O'Neill to succeed Dr. Gifford on the Finance Committee.

11. *Liaison Committee to State Bar of California:*

A report of the committee was presented for informational purposes and it was voted to express to Dr. Francis E. West and the members of his committee the commendation of the Association for the fine work outlined in the report.

12. *Liaison Committee to California Hospital Association:*

Chairman MacLaggan reported that San Diego County had been selected for a pilot trial of the operations of the Guiding Principles for Physician-Hospital Relations. Practically all hospitals in the county, he reported, have expressed their willingness to cooperate.

Dr. MacLaggan also reported that in two other areas the hospitals have requested the Association to furnish a team of inspectors under this program, on the basis that effective and objective inspection teams on a local basis require time to develop. He suggested that the present committee, which includes Drs. E. E. Wadsworth, Jr., and Bert Halter should constitute the state team for this purpose at the outset but that other names should be added in all parts of the state to accommodate further requests of this type. On motion duly made and seconded, this suggestion was voted.

Dr. MacLaggan also suggested that county societies be requested to approve the Guiding Principles and it was agreed to make this request.

13. *New Business:*

(a) Dr. MacLaggan presented a request of the San Diego County Medical Society for reconsideration of an earlier Council action which approved the writing of coverage by California Physicians' Service where members of a group might be located in more than one county. On motion duly made and seconded, it was voted to refer this request to the Commission on Medical Services–C.P.S. liaison committee.

(b) Secretary Hosmer presented a request received from the Bay District branch of the Los Angeles County Medical Association for the naming of specific alternates to serve for specific delegates in the House of Delegates. On motion duly made and seconded, it was voted to refer this request to the Speaker and Vice-Speaker of the House of Delegates.

14. *Time and Place of Next Meeting:*

The chairman announced that the next meeting would be held in Los Angeles on October 22. The November meeting, tentatively scheduled for November 12, may be postponed if, in the judgment of the chairman, such meeting is not warranted.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:55 p.m.

SAMUEL R. SHERMAN, M.D., *Chairman*
MATTHEW N. HOSMER, M.D., *Secretary*

Solo Practice

Advantages and Disadvantages as It Affects the Patient, the Physician and Medicine

JUST AS no man is an island, sufficient unto himself, so no doctor practices truly alone. There is no such thing as a completely solo practice with no contact or relationship of one doctor to his professional colleagues.

It is popular to assert that the growth of knowledge and skill in medical practice has made it impossible for one man to encompass all medical knowledge, that medicine must be practiced by a group of doctors, each with special skills and interests, in order to bring to bear all medical knowledge on the problems of the sick person.

Both assertions are so distorted as to obscure the truth. While it is surely true that no one man can know all of medicine today, it is very probable that at no time in history could any one man do so. Ogg, the cave medicine man, often must have felt the need for consultation with his professional brothers; all recorded medical history, from the earliest dates, makes reference to men of medicine with special skills or interests which they shared with their colleagues to resolve the problems of the patient. On the other hand, it is very doubtful that any group medical practice yet devised has doctors so highly selected and so widely varied that it can muster all facets and all existing medical knowledge for every challenge presented to it.

The differences between solo and group medical practice are not differences in kind, but only differences in degree and in application.

Theorists seeking a medical Utopia, with the highest motivation, imagine that a type of medical organization consisting of a wide spectrum of medical specialists, working under one roof, with a formal and tight mutual financial arrangement, must be greatly superior to what appears to be a rather hit-or-miss, haphazard relationship of doctors in solo private practice.

Yet, the more discerning of medical philosophers have recognized that nearly all California doctors practice in a loose sort of medical group. Each doctor consults freely on an informal basis and often refers patients on a more formal basis to medical specialists in whose skill and judgment he has confidence. Perhaps the greatest advantage of such an arrangement is its flexibility, and its opportunity to tailor the study and treatment to the needs of a particular person at a particular time.

Theorists following the lead of the very thoughtful students who prepared the 1932 study on the Medical Care for the American People, under the committee on the costs of medical care (led by California's own Ray Lyman Wilbur), suggest that some hidden adverse thing opposes and delays the logical growth and development of medical group practice. They seem to believe that vigorous subsidy by the government, with money, with facilities, or simply with prestige and patient referral, is necessary. This would allow formation and growth of medical groups, which they regard as essential to hasten the millennium of better medical care for everyone.

Yet, there has been no artificial impediment to the growth of such medical group practice. Many of the world's greatest group clinics, such as the Mayo's, the Crile's, the Lahey's, or our own California examples, such as the Palo Alto Clinic, have been developed (nearly always as the expansion of solo practice of one or more outstanding doctors) under an atmosphere of free enterprise, and have prospered and done well. On the other hand, while many new medical groups are formed each year, a large number of these groups last only a few years and then disband. Their dissolution has arisen in some instances from financial insecurity or from lack of public support and from the fact that their doctor members find themselves happier in the freedom of solo practice and seem to feel that in solo practice they are able to bring a higher and more personal quality of care to the majority of the problems of the patients they serve.

Outstanding medical group practices excel in ferreting out the rare and obscure disease processes. Yet, this excellence stems as much from the caliber of the members of the group as from the group practice mechanism itself.

In many instances, a type of group practice develops because of economic compulsion, as in medical schools, county hospitals, and military medical organizations, which lump the patients together for administrative convenience and control. Yet, the most casual study shows wide variation in the quality and cost of medical services provided by such groups, from very poor to very good.

It is obvious that group medical practice is more easily dominated by nonmedical sponsoring groups than is solo practice. It may well be that the recent resurgence of interest in artificial stimulation of group practice arises at least as much from a desire to dominate as from general concern for the patient.

And when group practice is combined with a financially captive group of patients as in certain current prepaid group clinic plans (and when such clinics are quick to proclaim that a sick patient is really a liability to them) the great body of doctors is rightly suspicious and must insist, on the basis of repeated earlier experiences, that the best interests of the patient and the public dictate a go-slow, wait-and-see attitude.

It is occasionally argued that the group practice arrangement is cheaper, since overhead is shared, supporting personnel is less, and facilities are used more efficiently. Several studies by group clinic managers purport to show that actual unit costs are, in fact, less, "where equivalent services are offered." But just here seems to lie the rub. There is a widespread feeling among doctors that many, if not most, group clinics provide a great many unnecessary and often overlapping services; these are occasionally provided for financial return, more often from a desire to be overly thorough-going and analytical to the point of scientific research at the patient's expense. It is widely recognized that doctors in group practices are paid at least as well, often better, than those in private practice.

Whatever the reason, the experience of many patients is that their own personal costs are not less, but greater under group practice.

Medicine is not an exact science, neither is it a commodity. It is an art, bringing to bear on the complex problems of a single human being a great variety of scientific disciplines and a psychological and emotional approach, of understanding and human appraisal, that is vital to the well-being of the patient. The application of this art defies analysis or definition, but is a very important and tangible thing in the practice of medicine, and an extremely important element in the patient's ultimate recovery or better adjustment to the world in which he lives. It is a highly personal thing.

Patients have come more and more to appreciate and to seek out the personal physician, the doctor whom they like and respect and who understands them, who is well versed in the disciplines of his art, and who can apply or enlist, as a guide in the confusing maze of medical specialism, any current knowledge which will be helpful. This "personal physician" may be a specialist in any field of medicine or he may be a general practitioner, he may work in a rigidly defined and circumscribed group practice or in the more flexible loosely adherent group association which we call solo practice. His effectiveness, like that of all physicians, is largely owing to the kind of person he is, the kind of training he has had, his motivations and his conscience, rather than to the type of organization with which he is associated. In short, it is the quality of the doctor himself rather than his association with group or solo practice, that is the determinant of his results.

It is vital that the doctor study the sick person, not the disease, and not the welfare of the doctor's own associates. The most important thing a patient can buy from any doctor is the doctor's personal responsibility toward him. This should not be alienated or diluted by a concurrent sense of loyalty or financial responsibility to other physicians with whom he has developed a more or less artificial relationship.

A very important element in the personal physician relationship is the freedom of the patient to choose or to discharge his physician. This becomes very much simpler and less painful to both parties under a solo system. Satisfaction of the immediate needs of the patient during the night or on holidays or week-ends is much better related to personal care under a solo system.

It has been repeatedly demonstrated that large and outstanding group practice clinics still have a hard time coping, on an economical day-by-day basis, with the routine illnesses of the people in their immediate communities. This comes partly from the division of loyalty or responsibility and the lack of personal relationship, and partly from the ponderous effort to use a cannon or even an atom bomb to do the job of a rifle.

Group practice is valuable. It has much to contribute. So does solo practice. And it is neither accident nor the result of a deep conspiracy of opposition, that the solo practice of medicine still constitutes the principal method of supplying physician services in the United States and in California. It would appear that this is the natural outgrowth of the peculiar interpersonal relationship that is inherent in medical practice.

Doctors are still free to associate themselves in group practice without stigma or sacrifice. When they do, their lives are often more placid and they are often better paid than those doctors in solo practice. But no artificial support of one kind of practice or another, whether through government intervention, propaganda, or subsidy, labor union, employer groups or any other mechanism, is necessary or desirable.

Only in the free competition of the open market may one form or another of medical organization flower or fade as the consumer patient finds it of greater or lesser value to himself.

Under such freedom, both group and solo medical practice will continue to exist and serve the public. Relative emphasis on one or the other form will shift or vary from good times to bad, from youth to old age, from urban to rural, or from industrial to agricultural. It is proper that this should be so. But artificial "rigging" of this balance offers no promise of increased quality, decreased costs, more widespread and equitable distribution or more satisfactory medical service for the people of California.

RALPH C. TEALL, M.D.
DWIGHT L. WILBUR, M.D.

Federal-State Medical Care

The Expanded Program for Needy and Near-Needy Aged

CALIFORNIA's participation in the increased amounts of Federal Government money that can be granted to states for medical care of the needy and near-needy aged as provided by a recent amendment to the Social Security Act (H.R. 12580, Public Law 86-778) must be developed in two phases. First, it was possible for California to qualify immediately —effective October 1 this year—for additional funds for the medical care of Old Age Security recipients. The second phase, which provides for the payment of medical bills for persons not receiving Old Age Security payments but who are unable to take care of all of their health expenses, cannot be implemented in California until the State Legislature passes enabling legislation and provides funds to be matched by the Federal Government.

Under the medical care program for Old Age Security recipients, which does not need state legislative action for implementation, the revised Social Security law provides that the Federal Government will contribute half of any amount up to $12 per person per month that the state pays to medical vendors for care of persons covered by the program. Under the present authorized medical care program in California, between $6 and $7 per person per month is being expended. This program provides for certain medical office and home visits and for the purchase of certain prescribed drugs on a limited "approved" list.

In its first discussions of the increased amounts that become available from the Federal Government on a matching basis under the Social Security Act amendment, the California State Department of Social Welfare recommended to the Medical Care Advisory Committee, on which the California Medical Association has representation, that there are substantial unmet medical care needs, among them: (a) Eye care, (b) dental care, (c) more adequate provision for necessary drugs, (d) provision for some office surgery, (e) some support of rehabilitation services, (f) money for the purchase of prostheses and assistive devices, (g) money for the support of coordinated hospital and home care programs, (h) money for the support of some home nursing service under the supervision of physicians.

The information available convinced the Advisory Committee that all of these areas appear to be worthy of support. The Department of Social Welfare is to develop estimates of the cost of providing these various services and to formulate necessary rules to control the program both as to quality and budgetary limits. The date when these additional areas of medical care can be entered will depend upon many factors. It is reported that perhaps the earliest addition to the program would be eye care.

The federal law provides that these programs shall be developed on a state-wide plan and administered by a single agency in the state. In California, the agency of administration is the State Department of Social Welfare. The amendments specified that the following types of care and services for the needy and near-needy individuals 65 or over shall be provided:

> Inpatient hospital services; skilled nursing home services; physicians' services; outpatient or clinic services; home care services; private

duty nursing services; physical therapy and related services; dental services; laboratory and x-ray services; prescribed drugs, eyeglasses, dentures and prosthetic devices; diagnostic screening and preventive services, and any other medical care or remedial care recognized under state law.

In California, inpatient hospital services are not provided under this plan for Old Age Security recipients, since this care is available through county hospitals.

These amendments to the Social Security Act met with the approval of the A.M.A.'s prime criteria that any plan should be voluntary and tailored to help those who need it and should have participation by state or county. As the present program is liberalized in California in the next few months, it is anticipated that the various county medical societies will be called upon by the medical directors of the county welfare departments to assist in its proposed development.

Representatives of the profession will be called upon in the months ahead to assist in developing the second phase of the program. The law is broad enough so that such a program might be developed on a prepaid basis.

In Memoriam

Alberty, Watie Murrell. Died August 5, 1960, aged 67. Graduate of the University of Kansas School of Medicine, Lawrence-Kansas City, 1917. Licensed in California in 1921. Doctor Alberty was a retired member of the San Diego County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✣

Buell, Arthur Whitton. Died in Long Beach, September 4, 1960, aged 80. Graduate of the New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1908. Licensed in California in 1908. Doctor Buell was a member of the Los Angeles County Medical Association.

✣

Cress, Walter William. Died August 13, 1960, aged 75. Graduate of the University of Illinois College of Medicine, Chicago, 1912. Licensed in California in 1913. Doctor Cress was a member of the Sacramento Society for Medical Improvement.

✣

Hall, George Joyce. Died in Sacramento, August 4, 1960, aged 72. Graduate of Cooper Medical College, San Francisco, 1912. Licensed in California in 1912. Doctor Hall was a member of the Sacramento Society for Medical Improvement.

✣

Harner, Clyde Ernest. Died in San Diego, June 3, 1960, aged 65, of portal cirrhosis. Graduate of the University of Colorado School of Medicine, Denver, 1920. Licensed in California in 1925. Doctor Harner was a retired member of the Riverside County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✣

Loos, H. Clifford. Died in Los Angeles, August 30, 1960, aged 78. Graduate of Cooper Medical College, San Francisco, 1905. Licensed in California in 1905. Doctor Loos was a member of the Los Angeles County Medical Association.

✣

Mills, Lloyd. Died in Rancho Santa Fe, August 12, 1960, aged 80. Graduate of Harvard Medical School, Boston, Massachusetts, 1902. Licensed in California in 1913. Doctor Mills was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and a member of the American Medical Association.

✣

Mohr, Charles Franklin. Died in San Diego, August 21, 1960, aged 55. Graduate of the George Washington University School of Medicine, Washington, D.C., 1931. Licensed in California in 1952. Doctor Mohr was a member of the San Diego County Medical Society.

✣

Mugford, Irene Knox. Died August 11, 1960, aged 61. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1927. Licensed in California in 1927. Doctor Mugford was an associate member of the Sacramento Society for Medical Improvement.

✣

Potts, Enos A. Died in Riverside, August 9, 1960, aged 69. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1922. Licensed in California in 1922. Doctor Potts was a member of the Los Angeles County Medical Association.

✣

Rose, Carl T. Died in San Francisco, August 18, 1960, aged 65, of cancer. Graduate of Baylor University College of Medicine, Houston, Texas, 1916. Licensed in California in 1921. Doctor Rose was a member of the San Francisco County Medical Society.

✣

Rummell, Robert Jefferson. Died in Livermore, July 6, 1960, aged 63, of acute myocardial infarction. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1922. Licensed in California in 1952. Doctor Rummell was a member of the Alameda-Contra Costa Medical Association.

✣

Smith, W. (William) Jewell. Died in Fresno, September 12, 1960, aged 60. Graduate of Northwestern University Medical School, Chicago, Illinois, 1929. Licensed in California in 1929. Doctor Smith was a member of the Fresno County Medical Society.

Annual Meeting

Ambassador Hotel
LOS ANGELES

April 30 to May 3, 1961

Papers for Presentation

If you have a paper that you would like to have considered for presentation, it should be submitted *to the appropriate section secretary* (see list on this page) no later than November 15, 1960.

Scientific Exhibits

Space is available for scientific exhibits. If you would like to present an exhibit, please write immediately to the office of the California Medical Association, 693 Sutter Street, San Francisco 2, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association no later than November 15, 1960. (No exhibit shown in 1960, and no individual who had an exhibit at the 1960 session, will be eligible until 1962.)

Medical Motion Pictures

The daytime Film Symposiums which proved so popular during the 1959 and 1960 sessions will be continued in 1961. Evening film programs will be planned for doctors, their wives, nurses and ancillary personnel.

Authors desiring to show films should send their applications to Paul D. Foster, M.D., California Medical Association, 2975 Wilshire Blvd., Los Angeles 5. All authors are urged to be present at the time of showing as there will be time allotted for discussion and questions from the audience after each film.

Deadline: December 1, 1960.

PLANNING MAKES PERFECT
AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

ALLERGY	**Gardner S. Stout**	39 North San Mateo Drive, San Mateo
ANESTHESIOLOGY	**Gilbert E. Kinyon**	5252 Chelsea Avenue, La Jolla
DERMATOLOGY AND SYPHILOLOGY	**Paul M. Crossland**	1120 Montgomery Drive, Santa Rosa
EAR, NOSE AND THROAT	**Marvin W. Simmons**	1020 East McKinley Avenue, Fresno
EYE	**Floyd M. Bond**	625 Broadway, San Diego 1
GENERAL PRACTICE	**A. J. Franzi**	3620 Army Street, San Francisco 10
GENERAL SURGERY	**William P. Mikkelsen**	1930 Wilshire Boulevard, Los Angeles 57
INDUSTRIAL MEDICINE AND SURGERY	**John H. Leimbach, Jr.**	525 Golden Gate Avenue, San Francisco 1
INTERNAL MEDICINE	**Clifford B. Cherry**	2400 Beverly Boulevard, Los Angeles 57
OBSTETRICS AND GYNECOLOGY	**Edward F. Healey**	711 D Street, San Rafael
ORTHOPEDICS	**Bret W. Smart**	2929 Summit Street, Oakland 9
PATHOLOGY AND BACTERIOLOGY	**George J. Hummer**	1328 22nd Street, Santa Monica
PEDIATRICS	**Harry O. Ryan**	194 North El Molino, Pasadena 4
PHYSICAL MEDICINE	**S. Malvern Dorinson**	450 Sutter Street, San Francisco 8
PSYCHIATRY AND NEUROLOGY	**Robert E. Wyers** **Mark Zeifert**	Psychiatry: Robert E. Wyers, Metropolitan Hospital, Norwalk Neurology: Mark Zeifert, 1065 S Street, Fresno 21
PUBLIC HEALTH	**Ellis D. Sox**	101 Grove Street, San Francisco 2
RADIOLOGY	**John R. Bryan**	450 Sutter Street, San Francisco 8
UROLOGY	**Sam Peck**	233 A Street, San Diego 1

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

Within the next few days the department will reactivate its Ad Hoc Advisory Committee on the Prophylaxis of Poliomyelitis in anticipation of the licensing of the live virus vaccine for use in this country. The committee was disbanded in February, 1959, after five years of arduous duty.

The Surgeon General in August announced that research and development work on the live virus vaccine had advanced to the point at which the U. S. Public Health Service considered it desirable to license the product for manufacture in the United States.

He reported that recommendations regarding dosage and mode and frequency of administration will be available shortly. It is not anticipated that large amounts of the vaccine will be available for use before mid-1961.

The Surgeon General's advisory committee pointed out the need for planned use of live vaccine and commented, "It appears probable that only a unified national program which utilizes each of the available types of vaccine to its best advantage can accomplish the total prevention of outbreaks."

The advisory group further said the live virus vaccine will be more appropriate for use on a community, rather than on an individual, basis. For the time being there will be a need for both the live and killed poliomyelitis virus vaccine.

Since the first of the year a total of 268 cases of paralytic poliomyelitis have been reported in California, which stresses the importance of continuing with full intensity the present immunization programs using killed Salk vaccine.

Detailed case histories have been received so far on 232 cases. More than 80 per cent of the patients were inadequately vaccinated. Fifteen per cent had received three doses and 4.3 per cent had received four or more doses. These proportions follow closely those found by the U. S. Communicable Disease Center in its analysis of nationwide data.

Immunization against influenza was recommended by the State Board of Public Health for Californians over the age of 65, for pregnant women, and for persons of all ages who have chronic debilitating diseases.

During the first quarter of this year more than 37,000 deaths from all causes were recorded in the state, approximately 3,000 more deaths than were expected on the basis of experience of previous years. Almost 90 per cent of these 3,000 "excess" deaths were in persons over the age of 65. About 1,000 of these deaths were directly due to influenza and pneumonia, and undoubtedly these two diseases were contributing factors in many of the other causes of deaths.

The board action followed similar recommendations from the U. S. Public Health Service, which stated recently that experience with excess mortality during the three most recent waves of influenza indicates the desirability of routine annual immunization for populations of particular risk.

In the past, influenza immunization programs have tended to be intermittent, predominately in response to public concern before and during epidemic periods. Such epidemics tend to recur in unpredictable cycles, but an endemic incidence occurs continually.

Influenza may not be more likely to attack persons in the groups specified above, but in these persons it is more likely to be a threat to life. For these reasons immunization of the specified high risk groups is recommended to begin now and to be continued annually, regardless of the predicted incidence of influenza for a particular year.

* * *

The State Board of Public Health in its recent Berkeley meeting also adopted regulations pertaining to the sanitation, healthfulness and safety of public swimming pools.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Another Worthwhile Project

It is my plan, from time to time, to present to the doctors of California, through this page, reports of some of the county auxiliary activities—so that they may become more aware of them and the important role that they play both in public relations and community services at the local level.

Recently it was my privilege to present a report on a most worthwhile project of the San Diego County Auxiliary. This was called Health Career Conference. It is my pleasure this time to recount to you another stimulating project inaugurated by the San Francisco County Medical Auxiliary.

This program, "Meals on Wheels," the first of its kind in the West, has as its purpose the provision of prepared meals for people who live alone and who, because of incapacitating conditions, are unable to purchase and prepare the food that they need. Conceived originally as a pilot program, it has been so enthusiastically received that the Auxiliary has been encouraged to expand its provisions.

The *modus operandi* of the program is as follows: An Advisory Board consisting of physicians and interested and experienced lay personnel was organized. The customers pay $1 for three meals—less, if they cannot afford that amount—and they receive this service twice a week. The Auxiliary hopes to increase this service eventually to five times a week. The San Francisco Homemaker Service screens and recommends the applicants. Meals are prepared by the Auxiliary members according to a diet recommended by the National Research Council and are delivered by Auxiliary members to the recipients. The Auxiliary's report on its "Meals on Wheels" program said that "the program not only meets a basic need for food, but has supplementary values related to mental health, providing personal contact for the home-bound, offering friendship, and, in addition, quick referral, if need arises."

With this service, patients will be able to leave hospitals earlier and convalesce at home, thereby alleviating the bed shortage, which in turn will be helpful to the medical community. Also, it is an important morale factor for the elderly who can return home instead of to an institution.

Financing for the program came from the Auxiliary and the San Francisco County Medical Society. Because of the excellent publicity which this venture has received, cash donations and offers to help are constantly received by the Auxiliary.

The press and radio, which have been most cooperative, have been an important factor in the good public relations engendered. In addition, San Francisco's Mayor Christopher, an honorary member of the Committee, proclaimed September 25 as "Meals on Wheels Week." Members of the local Auxiliary of the Dental Association have been most cooperative as ambassadors of good-will. It is expected that this program will become a permanent project of the Auxiliary.

It is a privilege to commend the San Francisco Auxiliary on this worthwhile project, for it is another example of the dynamic enthusiasm of our members, and of the cooperative spirit that exists between the Auxiliary and its parent organization, the County Medical Society. It is surely another example of the fact that our County Auxiliaries are not just spinning their wheels.

Mrs. Samuel Gendel
President, Woman's Auxiliary to the California Medical Association

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

The first recipient of the recently instituted **research fellowship** being underwritten by members of the medical staff of Children's Hospital of the East Bay is Dr. Kisaku Satomura of Kyoto, Japan.

Dr. Satomura, who will serve on the staff of the Bruce Lyon Memorial Research Laboratory, did extensive fellowship research in lipid metabolism at Kyoto University. His studies here will be centered on the question of supplying fats intravenously before and after surgical operations.

At the same time it was announced that a grant of $115,000 had been awarded by the National Institutes of Health for research at the Bruce Lyon Laboratory to find answers to the question: **What makes healthy skin?** The project will be under the direction of Dr. Arild E. Hansen, research director of the laboratory.

LOS ANGELES

Applications are being solicited for **scientific exhibits** for the 1961 Industrial Health Conference which will be held in Los Angeles, April 11 to 13, 1961. Application blanks and information may be obtained from Dr. Homer S. Elmquist, 629 South Westlake Avenue, Los Angeles 57.

SAN DIEGO

The 14th **Anual Postgraduate Assembly,** sponsored by the San Diego County General Hospital, will be held on Wednesday, November 2, and Thursday, November 3, 1960, at the County Hospital. Guest speakers will be Drs. J. Maxwell Chamberlain, E. Gray Dimond, John C. Ullery, Andrew Bassett, Robert Ward, Harris B. Shumacker, Jr., and Eugene R. Poutasse.

The Registrar is Dr. William Tisdale, San Diego County General Hospital, San Diego.

SAN FRANCISCO

Attendance of more than 5,000 public health workers from this country and abroad is expected for the 88th annual **meeting of the American Public Health Association** in San Francisco, October 31-November 4. Presiding over the meeting, the first on the West Coast since 1951, will be Dr. Malcolm H. Merrill, president of the organization and California's State Director of Public Health.

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The San Francisco chapter of the **California Medical Assistants' Association** is sponsoring an educational symposium on the general subject of "Psychological Barriers," to be held at the Sir Francis Drake Hotel on Sunday, November 6 from 9 a.m. to 4:30 p.m.

Further details may be obtained from Mrs. Dorothy Sola, 2115 20th Avenue, San Francisco.

GENERAL

Investigators at the University of Michigan School of Public Health are launching a three-year **study of California's state disability insurance** program.

The project will be done in two phases: one will examine what happens to 30,000 disabled workers who exhaust their benefits each year; the other will study administrative and medical aspects of the program.

In the first stage of the study, U-M specialists in public health economics will examine the worker's problems when his disability payments are discontinued after 26 weeks (the maximum coverage). They will explore the **type of medical care** he receives during the period of disability, the source of supplementary aid and the level of employment to which he returns.

This phase of the work will be sponsored by a grant of $22,425 from the Office of Vocational Rehabilitation in the U. S. Department of Health, Education and Welfare.

The second phase, scheduled to begin next September, will make an overall study of California's disability insurance program with particular attention to fiscal policies, medical features and administration. Evidence will be sought on the relationship between the disability program and benefits from Workmen's Compensation, hospital insurance, and the disability provisions of Federal Old Age and Survivor's Insurance.

Dr. Nathan Sinai (Dr. P.H.) is chief investigator, and S. J. Axelrod, M.D., is director of the U. M. Bureau of Public Health Economics. Dr. Sinai will conduct field investigations in California.

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Dr. Wayne Chesbro, Berkeley, and **Dr. Justin J. Stein,** Los Angeles, received a citation "for meritorious service to the people of the United States and the Medical-Health professions for their endeavor in the interest of Civil Defense, Disaster Medical Care, Radiological, Biological and Chemical non-military defense and mass casualty care" from the United States Civil Defense Council at its recent meeting in Minneapolis.

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The American Goiter Association, Inc., has announced the opening of competition for the 1961 **Van Meter Prize Award** of $300 to the essayist submitting the best manuscript of original and unpublished work concerning "Goiter—especially its basic cause." The studies so submitted may relate to any aspect of the thyroid gland in all of its functions in health and disease. The Award will be made at the annual meeting of the association in Philadelphia, May 3-6, 1961. The deadline for entries is January 1, 1961. Details may be obtained from Dr. John C. McClintock, 702 Madison Avenue, Albany 8, New York.

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The California League for Nursing Committee on Careers in Nursing has compiled a list of courses, workshops and institutes for graduate nurses. The list gives dates, location, fees and where to apply for such courses throughout California. Copies may be obtained by mailing a request, with a stamped return envelope, to: Committee on Careers in Nursing, California League for Nursing, 465 Post Street, San Francisco 2.

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The Third Western Sectional Meeting sponsored by the **International College of Surgeons** will be held in Las Vegas, Nevada, beginning with registration on Sunday, November 20, and scientific meetings Monday and Tuesday, November 21 and 22. The annual banquet will be held Monday night at the Riviera Hotel.

Applications for charter membership in the **American Society of Diagnostic Radiology** are now being received. Membership is open to general practitioners and internists who do or may wish to do some types of diagnostic radiology in their offices.

Further information may be obtained from Dr. Louis Shattuck Baer, 411 Primrose Road, Burlingame.

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The Western Society for Clinical Research will hold its fourteenth annual meeting in Carmel, January 26, 27, and 28, 1960. Information regarding the meeting may be obtained from the secretary, Dr. William N. Valentine, University of California Medical Center, Los Angeles 24.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Neuropathology. Tuesdays and Thursdays, October 18 through December 6. Twenty-eight hours. Fee: $105.00.

Below-Knee Prosthetics. Monday through Friday, October 31 through November 4. Enrollment limited to 20. Fee: $125.00.

Proctology—Lecture and Surgery Demonstration. Wednesday, November 30. Nine hours. Fee: $40.00.

Treatment of Selective Hematologic Disorders. Saturday, December 10. Seven hours. Fee: $20.00 (includes lunch).

Below-Knee Prosthetics. Monday through Friday, December 12 through 16. Enrollment limited to 20. Fee: $125.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 9 through 22. Twenty-four hours. Fee: $125.00.

Internal Medicine (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: $50.00.

Below-Knee Prosthetics. Monday through Friday, January 23 through 27. Enrollment limited to 20. Fee: $125.00.

Fractures (Lecture and Dissection). Friday through Sunday, February 24 through 26. Eighteen hours.*

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $15.00 (includes one lunch and one dinner).

Office Surgery. Friday and Saturday, April 18 to 19. Twelve hours.*

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through May 15. Thirty-two hours. Fee: $150.00.

Low Back Pain. Friday and Saturday, May 12 and 13. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Advances in Ophthalmic and General Pathology. Thursday through Saturday, November 3 through 5. Twenty-one hours.*

Symposium on Ear-Nose-Throat Problems in Children, Children's Hospital. Saturday, November 5. Seven hours. Fee: $12.50.

Psychological Problems in Medical Practice. Friday through Sunday, November 11 through 13. Twenty-one hours. Fee: $10.00.

Retinal Detachment Surgery. Thursday through Saturday, December 1 through 3. Twenty-one hours.*

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Civilization and Man: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours. Fee: $25.00.

A Course in Pediatrics. Saturday through Monday, February 11 through 13. Twenty-one hours.*

Symposium on Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Eye Conference. Each Monday morning.

Didactic Course in Ophthalmology. Each Monday and Wednesday, 7 to 8:30 p.m.

Conference on Cataracts (limited to physicians specializing in Eye or EENT). Wednesday through Friday, November 9 through 11. Fee: $100.00.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

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*Fee to be announced.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Recent Advances in Medicine. Thursday and Friday, November 17 and 18. Huntington-Sheraton Hotel, Pasadena. Fee: $25.00.

Nuclear Medicine:

Part I, January. Fee: $50.00.
Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Clinical Hematology. Saturday and Sunday, February 25 and 26.*

Hawaii Course. August 2 to 18.

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Thorax, Abdomen, Pelvis. Monday and Wednesday, January 4 through April 12. 121 hours. Fee: $125.00.

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Thorax, Abdomen, Pelvis. Wednesdays, January 4 through April 12. Twenty-eight hours. Fee: $50.00.

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: G. E. Norwood, M.D., assistant dean and chairman, Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 13 and 14, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine. Location to be announced. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

OCTOBER MEETINGS

California Academy of General Practice 12th Annual Scientific Assembly. October 16 through 19. Masonic Memorial Temple, San Francisco. *Contact:* William W. Rogers, executive secretary, 461 Market St., San Francisco 5.

Western Orthopedic Association Annual Convention. October 22 through 27. Hotel Del Coronado, Coronado. *Contact:* Mrs. Vi Mathieson, executive secretary, 354 21st St., Oakland 12.

Association of State and Territorial Health Officers. Jack Tar Hotel, San Francisco. October 26 through 28. *Contact:* A. C. Offutt, M.D., secretary-treasurer, 1330 W. Michigan Street, Indianapolis 7.

St. Jude Hospital—Fullerton 2nd Annual Postgraduate Assembly. October 27 and 28. St. Jude Hospital. *Contact:* B. L. Tesman, M.D., chairman, St. Jude Hospital, Fullerton.

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*Fee to be announced.

CALIFORNIA SCHOOL HEALTH ASSOCIATION Annual Meeting. October 29 and 30. Hotel Whitcomb, San Francisco. *Contact:* Mr. William H. Wyckoff, secretary, 451 West Joaquin Ave., San Leandro, Calif.

AMERICAN SCHOOL HEALTH ASSOCIATION, San Francisco. October 29 through November 4. *Contact:* A. O. DeWeese, M.D., executive secretary, 515 E. Main St., Kent, Ohio.

AMERICAN PUBLIC HEALTH ASSOCIATION, San Francisco. October 31 through November 4. *Contact:* Berwyn F. Mattison, M.D., executive director, 1790 Broadway, New York 19.

NOVEMBER MEETINGS

SAN DIEGO COUNTY GENERAL HOSPITAL 14th Annual Postgraduate Assembly. Wednesday and Thursday, November 2 and 3. San Diego County General Hospital, North End of Front Street, San Diego. *Contact:* Frank H. Carter, M.D., chairman, 2001 Fourth Avenue, San Diego 1.

AMERICAN SOCIETY OF TROPICAL MEDICINE AND HYGIENE. Biltmore Hotel, Los Angeles. November 2 through 5. *Contact:* Rolla B. Hill, M.D., executive secretary, 3575 St. Gaudens Rd., Miami 33, Florida.

LOS ANGELES PEDIATRIC SOCIETY Annual Brennemann Lectures. November 9, 4 to 10 p.m., and November 10, 9 a.m. to 7 p.m. Ambassador Hotel, Los Angeles. *Contact:* Neil N. Litman, M.D., vice-president, 5830 Overhill Drive, Los Angeles 43.

SAN DIEGO CHAPTER OF THE CALIFORNIA ACADEMY OF GENERAL PRACTICE Scientific Symposium. November 10, 11 and 12. Hotel Riviera, Las Vegas, Nevada. *Contact:* George H. Burkhart, M.D., chairman, program committee, 514 3rd Ave., Chula Vista.

PACIFIC COAST FERTILITY SOCIETY. November 10 through 13, Hotel Tropicana, Las Vegas, Nev. *Contact:* Anah C. Wineberg, M.D., secretary-treasurer, 3120 Webster Street, Oakland.

CALIFORNIA SANATORIUM ASSOCIATION Annual Business, Clinical and Administrative Session. November 12. Olive View Hospital, Olive View, Calif. *Contact:* J. P. Myles Black, M.D., Olive View Hospital, Olive View, Calif.

CALIFORNIA CONFERENCE OF LOCAL HEALTH OFFICERS Fall Meeting, November 14 and 15, Oakland, Calif. *Contact:* Donald S. Davy, M.D., State Department of Public Health, 2151 Berkeley Way, Berkeley 4.

AMERICAN COLLEGE OF PHYSICIANS Southern California Regional Annual Basic Science Lectureship. November 18, California Club, Los Angeles. Dinner and cocktails, 6:30 p.m. Speaker: Melvin Calvin, Ph.D., professor of chemistry, University of California, Berkeley. Subject: "Origins of Life." Members and invited guests. *Contact:* George C. Griffith, M.D., governor ACP, P.O. Box 25, 1200 N. State Street, Los Angeles 33. CApitol 5-3131, Ext. 7-1543.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

1961 MEETINGS

LONG BEACH HEART, CANCER AND TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 12:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

THIRTIETH ANNUAL MID-WINTER CONVENTION IN OPHTHALMOLOGY AND OTOLARYNGOLOGY. January 23 to 27. Statler-Hilton Hotel, Los Angeles. *Contact:* Norman Jesberg, M.D., treasurer, 500 South Lucas, Los Angeles 17.

FRESNO COUNTY HEART ASSOCIATION Ninth Annual Central California Cardiovascular Symposium. January 27. 8:30 a.m. to 5:30 p.m. Fresno Elks Club, 5080 E. Kings Canyon Road, Fresno. *Contact:* Jack J. Jacobson, M.D., chairman, Professional Services Committee, 1584 N. Van Ness Ave., Fresno.

AMERICAN COLLEGE OF PHYSICIANS Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. Abstracts (300 words) of papers for consideration of presentation at the meeting should be sent in triplicate before November 1 to Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

INSTITUTE FOR METABOLIC RESEARCH "Lipid Metabolism in Diabetes and Related Conditions" two-day round table symposium. February 7 and 8. Highland-Alameda County Hospital, Oakland. *Contact:* L. W. Kinsell, M.D., director, Institute for Metabolic Research, 2701 14th Ave., Oakland.

OBSTETRICAL AND GYNECOLOGICAL ASSEMBLY OF SOUTHERN CALIFORNIA, 16th Annual Mid-Winter Clinical Assembly. Ambassador Hotel, Los Angeles, February 13 through 17. *Contact:* Dee Davis, executive secretary, 5478 Wilshire Blvd., Los Angeles 36, WEbster 4-1551.

CALIFORNIA TUBERCULOSIS AND HEALTH ASSOCIATION, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

SOUTHWESTERN PEDIATRIC SOCIETY Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

COLLEGE OF MEDICAL EVANGELISTS Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

INDUSTRIAL MEDICAL ASSOCIATION. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

MEDICAL STAFF OF CHILDREN'S HOSPITAL OF THE EAST BAY Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

THE PHYSICIAN'S *Bookshelf*

SURGERY IN WORLD WAR II—Neurosurgery, Volume II—Prepared and published under the direction of Major General S. B. Hays, The Surgeon General, United States Army. Editor in Chief, Colonel John Boyd Coates, Jr., MC; Editors for Neurosurgery, R. Glen Spurling, M.D., and Barnes Woodhall, M.D.; Associate Editor, Elizabeth M. McFetridge, M.A. Office of the Surgeon General, Dept. of the Army, Washington, D.C., 1959. 705 pages. This volume may be purchased from the Superintendent of Documents, Washington 25, D.C., for $7.00 per copy.

This is the second and final volume concerning the history of neurosurgery in World War II. The first volume published in 1958 was concerned with the administrative problems encountered in establishing effective neurosurgical service within the Medical Department and also the management of head injuries. This final volume covers injuries of the spinal cord, management of the ruptured intervertebral disc, and peripheral nerve injuries. Chapters and authors in the present volume are listed below:

PART I. INJURIES OF THE SPINAL CORD

I. Historical Note, by Barnes Woodhall, M.D.
II. The Zone of Interior by Barnes Woodhall, M.D.
III. The Mediterranean (formerly North African) Theater of Operations, by Eldridge H. Campbell, Jr., M.D.
IV. The European Theater of Operations, by R. Glen Spurling, M.D.
V. The Management of Acute Compound Battle-Incurred Injuries of the Spinal Cord, by Donald D. Matson, M.D.
VI. Urologic Aspects of Spinal Cord Injuries, by George C. Prather, M.D.
VII. The Management of Paraplegic Patients in Zone of Interior Hospitals, by Barnes Woodhall, M.D.
VIII. Management of the Ruptured Intervertebral Disk (Herniated Nucleus Pulposus), by Glen Spurling, M.D.

PART II. PERIPHERAL NERVE INJURIES

IX. Historical Note, by Barnes Woodhall, M.D.
X. The Zone of Interior, by Barnes Woodhall, M.D.
XI. The Mediterranean (formerly North African) Theater of Operations, by Eldridge H. Campbell, Jr., M.D.
XII. The European Theater of Operations, by Glen Spurling, M.D.
XIII. Standard Methods of Examination in Peripheral Nerve Injuries, by Frederic H. Lewey, M.D.
XIV. Anatomic Approaches to the More Commonly Injured Peripheral Nerves, by Warner Wells, M.D., Frederick M. Owens, Jr., M.D., and Francis A. Echlin, M.D.
XV. Techniques of Peripheral Nerve Repair, by Benjamin Bradford Whitcomb, M.D.
XVI. Combined Bone and Periperal Nerve Injuries, by Wade C. Myers, Jr., M.D., and Robert T. Rosenfeld, M.D.
XVII. Peripheral Nerve Injuries Complicated by Skin and Soft-Tissue Defects, by Stanley E. Potter, M.D., and Edmund John Croce, M.D.
XVIII. Peripheral Nerve-Vascular Injuries, by Barnes Woodhall, M.D.
XIX. Causalgia Following Combat-Incurred Injuries of the Peripheral Nerves, by Frank H. Mayfield, M.D.
XX. Peripheral Nerve Grafts, by Frank E. Nulsen, M.D., Frederick H. Lewey, M.D., and William P. Van Wagenen, M.D.
XXI. Neuropathologic Changes in Battle-Incurred Injuries of Peripheral Nerves, by William R. Lyons, Ph.D., M.D.
XXII. Physical Therapy in the Management of Peripheral Nerve Lesions, by William K. Massie, M.D.
XXIII. Orthopedic Techniques for Use in Irreparable Nerve Injuries, by T. Campbell Thompson, M.D.

In Part I, the management of casualties with spinal cord injury has been outlined in detail. The accomplishments of the paraplegic centers constitute one of the greatest advances in military medicine in World War II. The total care of the paraplegic patient as well as a discussion of the numerous possible complications are clearly presented in an authoritative fashion.

The experience gained in military hospitals regarding the surgical treatment of ruptured intervertebral discs was found to be different strikingly from civilian practice. Once it had been discovered that only a minority of such patients operated upon could be returned to active duty, the majority of such patients were transported back to the zone of the interior.

Peripheral nerve injuries constituted the heaviest neurosurgical load in World War II. Primary neurosurgery was not carried out. Efforts were made to segregate peripheral nerve injuries in special centers where within three to twelve weeks after initial injury secondary nerve suture was carried out. This subject is covered in considerable detail and is particularly well illustrated with line drawings, charts, and photographs. Follow-up studies of the peripheral nerve injuries are of particular importance.

The addition of Volume II concerning neurosurgery in World War II completes the wartime record of this surgical specialty. Both volumes will be valued by all neurosurgeons as well as by general surgeons, neurologists, urologists, and general practitioners, who are in some way concerned with the care of patients with head injuries, paraplegia, or peripheral nerve injuries.

PROCEEDINGS OF A SYMPOSIUM ON IMMUNIZATION IN CHILDHOOD, held in The Wellcome Building, London, 4th to 6th May 1959. Published by E. & S. Livingstone Ltd., Edinburgh and London. Distributed in the United States by The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 139 pages, $4.25.

The title of the book establishes its character. The data and viewpoints presented by some ten individuals are typical of all symposia. Some sixty individuals attended the five sessions. All but seven were from the British Isles. Some of those attending entered into the discussions of the subjects presented and expressed their personal opinions and experiences. This symposium was held in May of 1959; the purpose as stated in the foreword: "The time has come to assess all the evidence which has accumulated and to attempt to reach agreement on certain basic principles which must be observed in all inoculation schedules." It seemed to this reviewer the real purpose of the symposium was to work out the confusion and disorganization that had developed in the field of immunization under the system of socialized medicine in England. Some lethargy in immunization procedures must have existed for it was not until 1942 that, according to the data presented, a vigorous drive for diphtheria immunization developed. Five sessions were held. Discussions covered the following subjects:

"The risks of immunization."

"Provocative poliomyelitis."

"Hazards of pertussis vaccination."

"Faults in the sterilization of syringes and needles."

"Personal records and recommended programs and techniques."

For American edification it would seem that such discussions were more academic than practical.

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BASIC OFFICE DERMATOLOGY—Stuart Maddin, M.D., Fellow, American Academy of Dermatology and Syphilology; Member of the Medical Staff of the Vancouver General Hospital, Vancouver, British Columbia; Julius L. Danto, M.D., Fellow, American Academy of Dermatology and Syphilology; Member of the Medical Staff of the Vancouver General Hospital; and William D. Stewart, M.D., F.R.C.P. (C), Clinical Instructor (Dermatology) Department of Medicine, Faculty of Medicine, University of British Columbia. With Forewords by Dr. R. F. Farquharson, M.D., University of Toronto, and M. B. Sulzberger, M.D., New York University. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960. 308 pages, $11.75.

In the preface the authors state their manual is designed to make the average physician more knowledgeable in the management of the common dermatoses. The book is printed in double columns on good paper and is easy to read.

Attention is called to the need of elicting a careful history, doing a proper physical examination and applying such diagnostic tests as may be indicated—as in all other fields of medicine.

The first section, comprising about two-thirds of the 296 pages of the book discusses the common dermatoses. Each is introduced with a sentence or two characterizing one or more salient features. The presentation in each instance then follows under the headings of significant facts, clinical appearance and course, histopathology, differential diagnosis, diagnostic aids, office management and suggested reading. There are many black and white photographs. Frequently where the manifestations are widespread, there are anatomical charts indicating the common (shaded) and most common (blacked) areas of involvement. Additional charts, drawings or diagrams are added in some cases.

Section II consists of sixteen color pictures of common dermatoses, two to a page. Unfortunately the photographs for the most part are not up to the quality of the book otherwise. Many of the black and white pictures appear too dark and are not clear and sharp.

Section III devotes fifteen pages to regional dermatological diagnosis. The skin conditions most commonly involving areas such as the scalp, face, eyelids, lips, oral cavity, axillae, hands and wrists, genitalia, et cetera, are described in two or three sentences.

Section IV describes and illustrates the techniques for applying diagnostic procedures such as skin biopsy, examination for fungi and patch testing.

In the main portion of the book in the presentation of "office management" an effort has been made to emphasize a single effective therapeutic outline for each condition. In Section V, titled therapeutic adjuncts for resistant cases or clinical variants, various aspects of dermatological therapy are described in greater detail.

In Section VI diseases having a skin component but affecting multiple organs in the body are presented at some length. Disseminated lupus erythematosus, scleroderma, sarcoidosis, syphilis, tuberculosis, porphyria, xanthomas and others are covered.

Section VII is a short discussion of dermatologic allergy and the book closes with a chapter titled dermatological counselling based on physiology. Here the correct care of normal skin and hair, the influence of factors such as diet, weather and sun exposure, "permanent" waving solutions, bleaches and dyes, cosmetics and deodorants are discussed.

There is an excellent index.

I believe the book will be most helpful to students, general practitioners and physicians in other fields who wish a short and concise description of the more common skin diseases. It will aid those with a limited dermatological background in the diagnosis and treatment of uncomplicated common dermatoses. Considering the limitations imposed by brevity and the rather rigid confines of the outline system adopted for the book, I believe the authors have done very well.

HERMAN V. ALLINGTON, M.D.

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HANDBOOK OF NEUROLOGICAL DIAGNOSTIC METHODS—Edited by Fletcher McDowell, M.D., Assistant Professor of Medicine (Neurology), Cornell University Medical College; and Harold G. Wolff, M.D., Anne Parrish Titzell Professor of Medicine (Neurology), Cornell University Medical College. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 201 pages, $4.50.

This 200-page paper-bound manual has been written primarily for the medical student. Principles are outlined to help in eliciting an adequate history. An extremely detailed outline covering the neurological examination is presented. Brief descriptions are presented of numerous types of diagnostic measures, such as lumbar puncture, skull x-rays, pneumoencephalography, arteriography, laminograms, dural sinus venography, myelography and electroencephalography. Chapters on visual fields and ocular motility functions are especially well presented and contain excellent charts and drawings. Such topics as smell function, cystometrics, audiometry, caloric tests, sweating tests, and electrodiagnostic procedures are given in brief form. An introduction to selected clinical problems has been given concerning management of the comatose patient, acute head injuries, management of the delirious patient, status epilepticus, and ventilatory failure.

This handbook will be of little value to the practicing neurologist or neurosurgeon. It should be of value, however, to the medical student for whom it has been written. It will be useful also to the young physician beginning his training in the fields of neurology or neurosurgery or to the practitioner who finds it necessary to find a brief review of the nervous system.

ATLAS OF NEUROSURGICAL TECHNIQUES, AN—James L. Poppen, M.D., Neurosurgeon, The Lahey Clinic, New England Baptist Hospital, and the New England Deaconess Hospital; W. B. Saunders Company, Philadelphia, 1960. 522 pages, $28.00.

This atlas, compiled by one of the most skillful and experienced American neurosurgeons, covers practically the entire scope of this entire surgical specialty. The contents are divided into five main categories, including head, neck, chest, and abdomen, extremities and spine.

All of these standard neurosurgical procedures are outlined in detail, giving particular attention to position of the patient, all steps in the technique of the procedure, and are accompanied by excellent line drawings. Very few photographs and x-rays are included. While an attempt has been made to classify the procedures considered in the first section concerning the head into extracranial skull and intracranial lesions and operations, the subject matter is so varied that the organization of this particular section seems poorly done. Those procedures concerning the neck, the trunk, extremities, and spine, lend themselves more readily to classification, and their presentation appears more orderly. The volume is well indexed, but no attempt has been made to provide references.

This atlas will have no appeal to anyone outside the field of neurosurgery; but to all concerned with this specialty, whether in training or in practice, this atlas will be of real and lasting value.

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DRUGS OF CHOICE, 1960-1961—Walter Modell, M.D., Editor; Director, Clinical Pharmacology, and Associate Professor of Pharmacology, Cornell University Medical College; Attending Physician, New York Veterans Administration Hospital. The C. V. Mosby Company, 3207 Washington Blvd., St. Louis 3, Mo., 1960. 958 pages, $13.50.

In his preface to the second (1960-1961) edition of Drugs of Choice, the editor states that the intention is to revise this book every two years. Although the second edition is only 27 pages larger than the first, eight new chapters have been added; obviously some old material has been deleted or shortened. Since your reviewer discussed the first edition in some detail in the January 1959 issue of CALIFORNIA MEDICINE, the present review will be concerned principally with these new chapters.

Chapter 2. Physical and Chemical Considerations in the Choice of Drugs is written by Doctors Lloyd C. Miller and Albert H. Holland. It emphasizes the importance of the physical condition of drug preparations in influencing gastrointestinal absorption and discusses "case-hardening" of tablets, nondisintegrating enteric coatings, salts vs. bases, liquid preparations, aerosols.

Chapter 7. The Choice of a Local Antiseptic is by Philip B. Price. Dr. Price defines antiseptics as "substances that, applied to microorganisms, render them innocuous, either by killing them or preventing their growth." He discusses disinfection of surgeons' and nurses' hands and of the field of operation, and the use of antiseptics in wounds.

Chapter 9. In this chapter Dr. Leighton E. Cluff discusses the Choice of Drugs for Viral, Spirochetal, and Rickettsial Infections, describing not only the use of anti-infective agents but also such ancillary drugs as norepinephrine, cortisone and inhalants.

Chapter 14. The authors of the Choice of Sedatives and Tranquilizers in General Medical Practice are Dale G. Friend and James T. Hamlin III. It consists largely of an abbreviated pharmacology of the drugs. Its chief virtue is in the comparative evaluation of the newest drugs of this group.

Chapter 21. The editor, Walter Modell and George C. Reader prepared the Choice of an Anorexiant. They have written an excellent brief review of the problem of controlling diet in obesity and have described briefly the pharmacology and use of a long list of amphetamine congeners used to curb appetite.

Chapter 31. The Choice of Drugs in Endocrine Dysfunction is by Herbert S. Kupperman and consists of 30 pages of carefully written discussions not only of the actions of all the hormone preparations but of clinical conditions in which they are used.

Chapter 38. This chapter on the Choice of Drugs for Ophthalmic Use by Irving H. Leopold achieves well the purpose of the book to provide "a practical guide to the selection of the best drug for a particular therapeutic problem." The author discusses a large variety of locally and systemically acting drugs, how to modify their absorption and action, how to choose a particular drug for a particular indication.

Chapter 39. The Choice of Drugs for Otolaryngologic Disorders by William H. Saunders is unfortunately not up to the standard of the rest of the book. Nearly half of the chapter is devoted to describing clinical conditions of the ear and nose which would be already well known to the reader and the discussion of drugs is too rudimentary.

In his preface to this second edition Dr. Modell explains that the Drug Index, which in the first edition was divided among the individual chapters, is collected into a single list. This occupies 100 pages of the 958 pages of the entire book, including the general index. Your reviewer wishes to repeat the final statement in his review of the first edition. "Since now nearly every physician receives an annual copy of 'PDR' which includes this information and more, the 'Drug Index' could well be omitted and thus reduce the cost without reducing the value of this book."

CLINTON H. THIENES, M.D.

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MANUAL OF HAND INJURIES—2nd Edition—H. Minor Nichols, M.D., Clinical Instructor in Surgery, University of Oregon Medical School, Portland; and Member of American Society for Surgery of the Hand; American Association for the Surgery of Trauma; Western Surgical Association; Societe Internationale de Chirurgie. Foreword by Michael I. Mason, M.D. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 400 pages, $11.00.

The second edition of Manual of Hand Injuries by H. Minor Nichols has been expanded by some 50 pages which represent, for the most part, additional material.

A chapter on crush injuries of the hand appears, and additions to other chapters include such topics as cross-finger flaps, expanded use of K. wires for skeletal fixation, carpel tunnel syndrome, etc. The anatomical plates have been reproduced in color, and additional line sketches added here and there for clarity. The index has also been expanded for better reference.

The general text remains essentially unaltered and presents the primary care of traumatic hand injury in a systematic way, dealing with structure by structure, and when possible tying the information together by presentation of selected personal cases. Various reparative methods are presented with the author generally indicating his preference.

Minimal space is devoted to late reconstruction and nontraumatic conditions of the hand at the end of the text, but this serves to give some insight into the vast field of surgery of the hand.

Although prepared principally for medical students and house officers, the second edition should have a broad appeal for the surgeons called upon to care for acute hand injuries.

L. D. HOWARD, JR., M.D.

ATLAS AND MANUAL OF DERMATOLOGY AND VENEREOLOGY—Professor Dr. W. Burckhardt, Director of the Municipal Polyclinic for Skin and Venereal Diseases, Zurich, Switzerland. Translated and Edited by Stephan Epstein, M.D., Marshfield Clinic, Marshfield, Wisconsin; Clinical Associate Professor of Dermatology, University of Minnesota School of Medicine, Minneapolis, Minnesota. The Williams & Wilkins Company, Baltimore 2, Maryland, 1959. 276 pages, $14.00.

As stated in the Preface to the American edition, Professor Burckhardt's Atlas and Manual of Dermatology and Venereology is a book intended for practitioners in nondermatologic specialties and for medical students. For this reason only the more common dermatoses are discussed. The coupling of the verbal and pictorial descriptions is oriented toward diagnosis. Controversial material is avoided and current therapy is emphasized.

A brief summary of cutaneous anatomy is presented first, followed by definitions and diagrams of the primary and secondary skin lesions. Then follow chapters covering the various types of dermatoses such as infectious diseases, inflammatory diseases of unknown etiology, allergic dermatoses, metabolic disturbances of the skin and numerous other categories, through the precancerous lesions, malignant lesions and venereal diseases. The common conditions in each group are illustrated and discussed. The text is succinctly but interestingly written. The concepts presented of pathogenesis and treatment are up-to-date, but the discussion is necessarily abbreviated. However, the material presented is wisely selected to fulfill the requirements of the intended readers.

Of special interest to any physician perusing this book are the especially well reproduced and strikingly beautiful color photographs of most of the conditions discussed. It is unusual to find so many such illustrations in a book of this size and price. A number of good quality black and white photographs are also included. An extensive list of current dermatologic texts and monographs is appended following the last chapter.

This pleasing volume represents a successful attempt to combine outstanding color and black-and-white clinical photographs of many common dermatologic conditions with a concise, modern text. It should be of interest and value to any physician concerned with diagnosis of skin disease.

Donald H. Paulson, M.D.

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CLINICAL PROSTHETICS FOR PHYSICIANS AND THERAPISTS—A Handbook of Clinical Practices Related to Artificial Limbs—Written by Miles H. Anderson, Ed.D., Director, Prosthetics Education Project, School of Medicine, University of California, Los Angeles; Charles O. Bechtol, M.D., Professor of Surgery (Orthopedics), Department of Surgery, School of Medicine, University of California, Los Angeles; and Raymond E. Sollars, Associate Director, Prosthetics Education Project, School of Medicine, University of California, Los Angeles. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959. 393 pages, $10.50.

This excellent book contains detailed information concerning artificial limbs for major amputations of the upper extremities and above knee amputations of the lower extremities. Emphasis is on conventional harness and controls, although biceps cineplasty is adequately discussed.

The care and conditioning of the amputation stump from the time of surgery until limb fitting is clearly explained with welcome stress on the importance of proper daily bandaging technique to "shrink and shape" the stump. Diagrams indicate how the bandages are applied.

The training of the amputee in the proficient use of his prosthesis is considered in great detail. Special techniques used in dressing, eating, etc., are included, as well as check lists in prosthetic use, tests of proficiency, and specific items of equipment for use in training and testing. Problems of different age groups, work requirements, and individual complications such as phantom pain and stump dermatitis are covered.

The text is presented in outline form with pertinent illustrations. There is considerable technical information, but reading interest is maintained by occasional highlights such as the twenty-six page section on "Locomotion" which represents the essence of many years research on artificial limbs.

This book will be of great assistance to the therapists and physicians who are responsible for the care and rehabilitation of the limbless.

The casual reader who rarely sees an amputee will be impressed by the considerable time and effort necessary to attain proficiency in the use of the prosthesis. He will understand the advantages of the "team" approach and become acquainted with the problems of the amputee, prosthetist, therapist, and physician in their mutual goal of rehabilitation.

Calvin K. Terwilliger, M.D.

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FOURTH TISSUE HOMOTRANSPLANTATION CONFERENCE—Annals of the New York Academy of Sciences, Volume 87, Art. 1; Pages 1-607. Published by the New York Academy of Sciences, 2 East Sixty-third Street, New York 21, New York, 1960. 607 pages, $5.00.

In his introductory remarks to this collection of 49 papers on related problems of homotransplantation, Converse quotes the remark of Woodruff in 1957 that for the surgeon, at least, the successful solution to the immunological problems of whole organ transplants, bids fair to open a new and exciting field, and a new meaning will be found for the motto, "No man is born for himself alone." The technical aspects of whole organ transplants which were first described the early part of the century may be considered the simplest part of the problem and may be well on the way to solution. Experimentally successful transplants with function have been described for the heart (14 days), heart and lungs (5 days), kidney (31 days), liver (8 hours). The splendid work of the Brigham group on kidney transplants in twins, of course, from the immunological point of view, is autografting, but the technical lessons learned are invaluable.

Research in the basic field has followed three main lines: (1) A search for actual mechanisms of homograft rejection; (2) a study of altered reactivity patterns; (3) a phylogenetic search for homograft rejection patterns in lower animal species. The papers in this volume encompass all these headings and mark the emergence of tissue homotransplantation research as a specialized discipline which Converse and Rappaport suggest should be called transplantation biology.

The difficulties which the interested clinician will encounter in the new field are well pointed up in the last paper of the volume on "Transplantese" by Gorer. The jargon of the researchers in the field will not be understandable without considerable study.

Although earlier research suggested that homografts must fail because of the immunological response of nuclear material between host and graft, there is slowly emerging a body of evidence to suggest that this reaction can be modified. Sufficient modification so that a practical means of tolerance of a graft can be developed is still far away but the glimmer of hope exists.

This volume is of value as a reference for workers in the field.

Roy Cohn, M.D.

OFFICE ASSISTANT, THE—In Medical Practice—Second Edition—Portia M. Frederick, Instructor, Medical Office Assisting, Long Beach City College; and Carol Towner, Director of Special Services, Communications Division, American Medical Association. W. B. Saunders Company, West Washington Square, Philadelphia 5, Pa., 1960. 407 pages, $5.25.

Since the present trend in the majority of doctors' offices is to employ women who are not trained nurses and secretaries who frequently are not familiar with medical terminology and practices, this book is invaluable as an office manual.

It is a comprehensive coverage of the manifold duties in any doctor's office which will be most valuable in relieving him so he may devote more time to his professional duties. It combines in a logical manner the medical-secretarial requisites for the one-girl office and coordinates the work for an office which hires more than one girl. It treats practically all of the problems encountered in a doctor's office without becoming technical and regardless of field of specialization.

Especially to be recommended is the chapter dealing with medical ethics and etiquette. This is one of the most important phases of a doctor's practice, one of which the patients are the most critical, and one which may harm the patient-doctor relationship the most if not learned and practiced.

As a reference or as a refresher, this book has a place in every doctor's office.

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PHARMACOLOGY AND THERAPEUTICS—A Textbook for Students and Practitioners of Medicine and Its Allied Professions—Fourth Edition, Revised and Enlarged—Arthur Grollman, Ph.D., M.D., F.A.C.P., Lecturer in Pharmacology and Toxicology, The Medical Branch, and Professor and Chairman of the Dept. of Experimental Medicine, The Southwestern Medical School, The University of Texas. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 1079 pages, 217 illustrations with two in color, $12.50.

The author states that "although only two years have elapsed since the appearance of the last edition, the rapid rate of progress in the fields of Pharmacology and Therapeutics has necessitated a revision of the present book." At first glance one sees a close similarity in the third and fourth editions, but careful page by page analysis discloses many new items in the fourth. Examples are a new paragraph on species as a factor modifying drug action, expansion of the discussions on drug toxicity and factors contributing to the termination of drug action, an additional three paragraphs on biological assay, introducing the reader to the idea of statistical analysis, a page on theories of anesthesia which contributes little since it is too brief to give the novice any idea of the factual backgrounds and offers nothing to the teacher. Among anesthetics, descriptions of halothane (Fluothane), methitural, thialbarbital and hydroxydione sodium succinate (Viadril) have been added. The chapter on alcohol has been rearranged, but few facts are added. There is an added paragraph differentiating between addiction and drug habit. This should have been included in earlier editions since no helpful information has been disclosed in laboratories or clinics in this regard in the last two years.

Dr. Grollman has departed from the arrangement of previous editions in that therapeutic use of the opium-type analgetic drugs is discussed under one heading, thus giving better opportunity for comparing their values for each therapeutic indication. He has done this also for other groups of like-acting drugs. He has added a page explaining the mechanism of action of ganglionic blocking agents, the same for neuromuscular block and other agents. A comparative table of characteristics of digitalis preparations has been compiled. The section on drugs acting in urinary tract infections follows anti-tuberculosis drugs rather than following local anti-infectives; this change is not justified. The section on dihydrostreptomycin does not take into consideration the more recent attitude toward this drug as more dangerous to the eighth cranial nerve than streptomycin. And so on. Seventy-two or more new drugs were added but many of them are only mentioned and few are discussed critically.

The material is included in the same 44 chapters, with the same titles as in the third edition, and the chapters are grouped in the same nine parts. The same lucid descriptions, scholarly presentations and fine synthesis of basic concepts and clinical applications are to be found in this fourth edition as were characteristic of the earlier editions. It is an ideal text for the medical student and for the physician's reference shelf.

CLINTON H. THIENES, M.D.

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SELECTED DISEASES — A Bibliography of Internal Medicine—Arthur L. Bloomfield, M.D., Professor of Medicine, Emeritus, Stanford University School of Medicine. The University of Chicago Press, 5750 Ellis Avenue, Chicago 57, Illinois, 1960. 312 pages, $6.00.

Scarcely two years ago Dr. Arthur Bloomfield, emeritus professor of medicine at Stanford University School of Medicine, gave us a brilliant annotated bibliographical study on the communicable diseases. Therein he established a new technique to guide students through the major writings which have brought us to our present position in the understanding of disease. In the present volume Dr. Bloomfield follows essentially the same pattern, selecting twenty-one diseases "of old and honorable lineage" from auricular fibrillation to trichinosis. References of fundamental importance with generous excerpts, translated where not in English, have been gathered and put together so as to provide, with the annotations, an almost continuous narrative in "an attempt to bridge the gap between past and present in medicine."

The attempt has been eminently successful. Nonetheless, there are some notable omissions. In the discussion of Stoke-Adams although W. H. Gaskell's classical paper is given due prominence, no reference is made to his superb survey of the position up to 1900 which appeared in E. A. Schäfer's *Textbook of Physiology* of that date; a survey which brings into proper perspective the contributions of Stannius, Kent, his and many others to heart block and which is far superior to some of the publications cited. Likewise, in the discussion of diabetes mellitus, the reviewer finds no mention whatsoever of the work of Lydia de Witt who, basing her experiments on the observations of Schulze and Ssobolew, approached diabetes in the same manner as Banting and produced a potent and active insulin; nor of E. L. Scott, who, as Banting himself had said, had come closer than anyone to solving the problem. The section on diabetes insipidus also leaves much to be desired, especially on the very difficult problem and involved literature on the control of water balance. Surely the remarkable findings of the Scharrers demand inclusion in any consideration of this subject.

Despite the omissions in which we must bow to the judgment of the author attempting to achieve balance, it can only be said that this is a superb book, original in concept and masterful in execution. It should be at the bedside of every physician, young and old, interested in clinical medicine. The great importance of the work lies in providing perspective since, to use Sir Winston Churchill's dictum made before the Royal College of Physicians in March 1944, "The longer you can look back, the further you can look forward" and there is a master physician to show the way.

J. B. deC. M. SAUNDERS, M.D.

EARLY DIAGNOSIS—Edited by Henry Miller, M.D., F.R.C.P., Physician in Neurology, Royal Victoria Infirmary, Newcastle upon Tyne. The Williams and Wilkins Company, Baltimore 2, Maryland, 1959. 400 pages, $6.50.

In Great Britain, which has developed a socio-economic system of medical care somewhat different from that in the United States, the general practitioner has far more patients to care for, far less time per patient, and far fewer hospital responsibilities than in this country. There is a much greater gap between the practitioner and the hospital specialist. And the natural history of disease is more difficult for the general practitioner to follow.

This book is written to give the general practitioner a greater acquaintance with some of the aspects of medicine which often are covered only by implication in standard English texts. It is in the form of some twenty-five essays by a number of Great Britain's most distinguished specialists. The result is *a book of good admonitions* on early diagnosis.

The tone is set in the first essay, by Lord Cohen of Birkenhead ("The purpose of diagnosis is action . . ."), who enunciates nine guiding principles ending with: "Never allow the social position of a patient to limit your examination." This principle is punctuated by such salty remarks as: "Cancer of the rectum is no respector of persons—if you don't put your finger in it, you put your foot in it . . . nor should rank blind one to the possibility of such diseases as syphilis, for every bishop has been an undergraduate, and every admiral a midshipman."

Some of the advice given is contrary to usual American experience. For example, regarding the practice of routine cytology smears for cervical cancer, Stabler remarks: ". . . practical considerations make the investigation of doubtful value under ordinary circumstances . . . it seems unlikely that smear examinations will lead to any significant alteration in mortality rates." And the serum iodine level for thyroid disease, employed freely in the United States, is passed over by Dunlap as "a delicate and difficult procedure which is seldom available for routine use."

For the most part, however, the essays are informative, the presentation and the writing are interesting. This volume can be recommended to the general medical reader.

Edgar Wayburn, M.D.

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CLINICAL ENDOCRINOLOGY I—Edited by Edwin B. Astwood, M.D., Grune & Stratton, New York, 381 Fourth Ave., New York 16, N.Y., 1960. 724 pages, $18.75.

Clinical Endocrinology I began as a second edition of Progress in Clinical Endocrinology, published some 10 years earlier under the editorship of Samuel Soskin. As the present book took shape under the editorship of Edwin Astwood, it was realized that it was properly not a revision, but in effect a new volume. Most of the chapters are made up of new material written by new authors; a number are monographs of lasting value.

Clinical endocrinology is a broad field of medical science and practice. In this book, sharp lines have not been drawn between what may be considered clinical or nonclinical, although the emphasis is on the former. Also, complete coverage of clinical endocrinology has not been attempted. The aim has been to provide concise, authoritative articles written by authors with considerable personal experience in their respective fields. In a few instances, there are fairly extensive reviews with more complete documentation, but in most cases, only key references have been cited.

Classic and well established material has, in some cases, been supplanted by topics selected largely on the basis of their current interest and importance. As a consequence, some areas have been dealt with more thoroughly than others, and some subjects have not received the attention they would deserve in a work of more extensive scope. Within this framework of limitations, however, a great deal of useful information and many interesting articles on a fairly wide range of topics have been included.

This is an excellent volume for the physician or the student with an interest in endocrinology to own, to browse through at his leisure, to spend more time with when he can. It is also a book for the shelves of medical schools and hospitals, to provide good present day reference in the rapidly growing and changing field of clinical endocrinology.

Edgar Wayburn, M.D.

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CLASSICS OF MEDICINE AND SURGERY—(Formerly titled: Epoch-making Contributions to Medicine, Surgery and the Allied Sciences)—Collected by C. N. B. Camac. Dover Publications, Inc., 180 Varick Street, New York 14, New York, 1960. 435 pages, $2.25.

SOURCE BOOK OF MEDICAL HISTORY—Compiled With Notes by Logan Clendening, M.D. Dover Publications, Inc., 180 Varick Street, New York 14, N. Y., 1960. 685 pages, $2.75.

This pair of source books of medical history make a useful working combination for those interested in the development of knowledge. Clendening's book is the more comprehensive if the more sketchy of the two: beginning with excerpts from the Egyptian papyri of the second millennium B.C., there are some 700 pages of excerpts from the writings of nearly every great doctor until the end of the nineteenth century. Although the selections are brief, there are descriptive notes and bibliographical references. Camac on the other hand has concentrated his interest on only seven epoch-making discoveries, but he has quoted at length and in some cases completely the original text. Antisepsis, circulation of the blood, percussion of the chest, auscultation of the chest, vaccination against smallpox, anesthesia and puerperal fever are the important subjects which are considered.

Both volumes are well edited with sufficient explanatory material to set the stage even for readers unfamiliar with the subject. These inexpensive but excellent reprints will do a service to the understanding of medical history.

Arthur L. Bloomfield, M.D.

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BASIC FACTS OF BODY WATER AND IONS—Stewart M. Brooks, M.S., Science Instructor, Lasell Junior College, Auburndale, Mass. Instructor in Pharmacology at Boston City Hospital School of Nursing, and Children's Hospital School of Nursing, Boston, Mass. Springer Publishing Company, Inc., 44 East 23rd Street, New York 10, N. Y., 1960. 159 pages, $2.75.

This book is a stated attempt to bring basic understanding of fluid and electrolyte problems to students of nursing, pharmacy and medical technology. As such, it is an acceptable contribution largely because of the attractively low price. A 69-page Part I covers the basic chemical and physical principles in an informative style that should provide good reading for medical students as well as paramedical personnel. In the 65-page Part II the author deals with clinical applications of fluid and electrolyte problems. Unfortunately, his clinical naïveté makes this section of little value to the medical student. The attempt to cover a large field with brevity and the failure, in many instances, to develop the clinical discussions on sound chemical concepts make me doubt if Part II will prove particularly valuable to nursing, technical and pharmacy students.

Telfer B. Reynolds, M.D.

PROSTHETIC PRINCIPLES—ABOVE KNEE AMPUTATION—Miles H. Anderson, Ed.D., Director, Prosthetics Education Project, School of Medicine, University of California, Los Angeles; John J. Bray, C.P., C.O., Associate Research Prosthetist, Prosthetics Education Project, School of Medicine, University of California, Los Angeles; and Charles A. Hennessy, C.P., C.O., Associate Director, Prosthetics Education Project, School of Medicine, University of California, Los Angeles. Edited by Raymond E. Sollars, Associate Director, Prosthetics Education Project, School of Medicine, University of California, Los Angeles. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1959. 331 pages, $10.00.

This highly technical work explains in great detail the process of developing and fitting the above knee prosthesis. There are many photographs illustrating this complicated procedure and the book should be of considerable value to the prosthetist.

There is a preliminary discussion of functional anatomy and locomotion and a chapter on the biomechanics of above-knee prosthesis fitting and alignment which would be of interest to the physician working with amputees.

CALVIN K. TERWILLIGER, M.D.

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CARCINOMA OF THE THYROID GLAND—A Clinical and Pathologic Study of 293 Patients at the University of California Hospital—Stuart Lindsay, M.D., Professor of Pathology, University of California School of Medicine; Pathologist, H. C. Moffitt Hospital, San Francisco, California; and Director of Laboratories, Sequoia Hospital, Redwood City, California. Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, 1960. 168 pages, $8.50.

Carcinoma of the thyroid is an intriguing disease. There is much controversy about the diagnosis, the degree of malignancy and the best form of treatment whenever the topic is discussed. The therapist is much influenced by his own experience and the impressions gained from what he recalls of that experience.

What Dr. Lindsay has done has needed doing for many years. In his study of the 293 cases from the University of California he has classified the cases according to the Warren and Meissner Atlas of Tumor Pathology and has modified this to a minor degree so that for the first time surgeons and pathologists can tie their own classifications into the picture of malignant goiter in a way that is understandable.

Cancers of the thyroid are classified by Dr. Lindsay as papillary, follicular and anaplastic. He has illustrated the gross and microscopic pattern of these tumors and has given a typical life history of each type as exposed by this study of 293 cases. He has made graphs and statistical studies which are by far the most complete of any produced up to this time. For the first time it is now possible for a surgeon or his consulting pathologist to classify the growth present in his patient and then by reference to the table to get a fair idea of the prognosis in this specific case. The follow-up studies have been so thoroughly prepared that by reference to this work one can closely determine the likelihood of recurrence, distant metastases, response to therapy and, best of all, be guided somewhat in selection of the proper therapy, the need for neck dissection or a determination as to the necessity of radiation therapy applied either externally or internally.

Following a minute study of the material contained in this treatise it is not hard for the reader to reach the same conclusions as those reached by Dr. Lindsay. In the excellent bibliography a reference is made to the work of the advocates of radical surgery in papillary carcinoma as well as the advocates of less radical surgery and then it is pointed out how the data in these 293 cases bear out or deny the contention of the two schools of thought. For instance, the finding of 30 per cent involvement of the opposite lobe in papillary carcinoma makes one wonder about the advisability of doing a hemithyroidectomy in these cases.

That all the problems of cancer of the thyroid have not been solved is proved by the following quotation from Dr. Lindsay's book: "Martin,[74] Crile,[3] and Underwood and coworkers[31] have claimed good results from the form of therapy which each employs. It remains to be proved whether biologic activity of the neoplasm and the resistance of the host, or the therapy employed is the more important factor in the final outcome of the disease. The present study strongly suggests the advisability of a more radical approach to surgical therapy in males and in patients in the older age group (over 40 years of age), since the data presented indicate that thyroid neoplasms in these groups of patients are more aggressive than in females or in younger individuals."

To this reviewer it seems that the bibliography which covers 78 references and the index which covers approximately six pages make this work of Dr. Lindsay an invaluable part of the library of anyone interested in the subject of cancer of the thyroid. The data contained in this review can be found nowhere else in the literature including that data from the Armed Forces Institute of Pathology which is the bible of serious workers in this field. Your reviewer has been eagerly awaiting the data offered in this treatise and feels that it is a most valuable contribution to the subject.

ROBERTSON WARD, M.D.

* * *

SURGERY OF REPAIR AS APPLIED TO HAND INJURIES—Second Edition. B. K. Rank, C.M.G., M.S. (Melbourne), F.R.C.S. (England), F.R.A.C.S.; Honorary Plastic Surgeon, Royal Melbourne Hospital; Visiting Plastic Surgeon, Repatriation Commission, Victoria; and A. R. Wakefield, M.S. (Melbourne), F.R.C.S. (England), F.R.A.C.S.; Plastic Surgeon, Royal Children's Hospital, Melbourne. Foreword by Sir Gordon Gordon-Taylor, K.B.E., C.B. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 284 pages, $9.00.

This text, which initially appeared in 1953, now comes out in a revised and improved second edition but without expansion beyond the purpose of the original undertaking.

Written by two eminent Australian plastic surgeons, the material of the text is mainly limited to the treatment of acute traumatic injuries of the hand with particular emphasis on the soft tissues. A chapter devoted to late reconstruction of the injured hand serves more as an introduction to this phase of repair.

The value of the book lies in the plastic aspects of soft tissue repair which are treated in detail and in a more comprehensive manner than found in other texts on hand surgery. Wound evaluation from the standpoint of repair is clearly outlined, and consideration of problems of tissue viability, methods of covering defects, selection of best type of skin cover, etc., are presented in a practical way.

The more definitive plastic procedures such as Z-plasty, rotational flaps, cross finger flaps, and all forms of both free skin grafts and soft tissue flaps and pedicles are given with reasons pro and con for their use. All phases of the treatment of the burned hand are also included.

Thus, from the standpoint of soft tissue repair, the context is excellent and as complete as could possibly be expected in any single volume. In addition, the text is well organized and indexed and easily read and understood.

There are so many good points on the problems of primary hand repair that any surgeon doing this type of work could not fail to profit by the serious reading of the entire book.

L. D. HOWARD, JR., M.D.

THE ACUTE MEDICAL SYNDROMES AND EMERGENCIES—Diagnosis and Treatment—Albert Salisbury Hyman, M.D., Associate Clinical Professor of Medicine, New York Medical College, New York, N. Y. With the collaboration of Samuel Weiss, M.D., Professor of Gastroenterology Emeritus, New York Polyclinic Medical School, New York, N. Y.; George Guttman Ornstein, M.D., Associate Clinical Professor of Medicine, New York Medical College, New York, N. Y.; Howard F. Root, M.D., Medical Director, Joslin Clinic, Boston, Massachusetts; Anna Ruth Spiegelman, M.D., Assistant Professor Clinical Medicine, New York University Postgraduate Medical School, New York, N. Y.; and Jack Abry, M.D., Associate Attending Physician, New York City Hospital, Elmhurst, N. Y. Landsberger Medical Books, Inc., New York, 1959. 442 pages, $8.75.

When the idea of this volume was conceived, the editor polled physicians throughout the United States to determine the subjects which should be covered. There was general agreement among the answers that cardiovascular, gastrointestinal, and pulmonary problems were the most common emergencies encountered. Next in order of frequency came acute diabetic problems, acute nephritic crises with uremia, urinary suppression and edema, and acute barbiturate poisoning. The contents of the book follow these six headings, each subject being written by a different collaborator.

The book takes up the common problems involved in the diagnosis and treatment of each of these subjects. In an effort to keep it as concise as possible, the authors have left the coverage somewhat superficial: Anatomic, physiologic, and other basic science material has been omitted. On the other hand, there is free discussion of the clinical aspects as the authors see them.

There is considerable unevenness in the coverage of the different subjects—which is out of proportion to their importance or the frequency with which they are encountered. One half of the book (by the principal author) is devoted to cardiac conditions. Consequently there is much more emphasis on cardiac problems than any other kind.

The diagnosis and treatment of hemorrhage from the oral cavity is discussed separately under both gastrointestinal and pulmonary systems, although in practice the first important problem of the emergency is to determine the source of bleeding, regardless of the system. The reviewer suggests that this and other emergency syndromes might be discussed best under the heading of their principal manifestations. (In general, the author of the section on gastric hemorrhage attempts to do this. But such fairly common causes of hemorrhage as bronchial adenoma and pharyngeal bleeding are lost in between chapters.)

Despite these deficiencies we feel that this is a book which can be valuable as a quick source of information to the doctor dealing with acute medical syndromes and recommend it accordingly.

EDGAR WAYBURN, M.D.

* * *

MEDICAL, SURGICAL, AND GYNECOLOGICAL COMPLICATIONS OF PREGNANCY, by the Staff of the Mount Sinai Hospital, New York City—Edited by Alan F. Guttmacher, M.D., Obstetrician and Gynecologist-in-Chief, The Mount Sinai Hospital, New York; and Joseph J. Rovinsky, M.D., Assistant Attending Obstetrician and Gynecologist, The Mount Sinai Hospital, New York. The Williams & Wilkins Company, Baltimore 2, Maryland, 1960. 619 pages, $16.50.

This new book represents the combined efforts of 68 members of the staff of New York's Mount Sinai Hospital, and is an outgrowth of the obstetrical department's organizational pattern set up there in 1952 by Alan Guttmacher, chief of the service. Ten specialty clinics were established to handle prenatal patients with various medical, surgical, and psychiatric problems, and the accomplishments in these areas have stimulated a hospital-wide interest in pregnant women. A natural consequence of this interest was the preparation of a book which would bring together in usable form the opinions and experiences of clinicians who had grappled with various segments of the almost endless array of disorders that may be associated with pregnancy.

As one would anticipate, much of the material is an extension of what can be found in the larger textbooks of obstetrics, gynecology, and internal medicine. The volume is reminiscent of the earlier (1934) effort of Adair and Stieglitz, whose "Obstetric Medicine," the work of nearly 40 nationally known authorities, had a brief flurry of popularity but never managed to appear again in revised form.

The book has 14 sections arranged according to bodily systems (pulmonary, gastrointestinal, and so forth) or by clinical disciplines, such as surgery, gynecology, and dermatology. Toward the end there is a section on malignant tumors in relation to pregnancy, with major emphasis on cancer of the thyroid, and finally a short but very good survey of genetic considerations in relation to medical counseling. In brief, one might say this is a collection of 49 reviews of quite variable length, some of which have been expanded by the inclusion of personal experiences and opinions. Such a volume is of considerable immediate interest as a reference work, but, if it is to continue to warrant a place on the obstetrician's shelf, it must be revised vigorously at rather frequent intervals. We may assume that the editors have already recognized this problem because, as they say in the preface, an attempt was made "to keep the material current" by largely excluding references to literature more than ten years old.

Residents and interns should have access to this volume in hospital or departmental libraries, and undoubtedly many practitioners will want to have it for quick reference in the office despite the high initial cost and the threat of rapid depreciation.

C. E. MCLENNAN, M.D.

* * *

YOUR HEART: A HANDBOOK FOR LAYMEN—H. M. Marvin, M.D., Associate Clinical Professor of Medicine, Yale University School of Medicine, Past President, American Heart Association, Former Member National Advisory Heart Council (U. S. Public Health Service). Doubleday & Company, Inc., 575 Madison Avenue, New York 22, New York, 1960. 335 pages, $4.50.

Marvin's book is by all odds the most complete, balanced, and authoritative book on diseases of the heart for laymen. It is clearly written, judiciously covers many controversial issues and in a way that will obtain the approval of most cardiologists and at the same time manages not to be frightening.

Dr. Marvin is a well-known, experienced cardiologist who, in his role as past president of the American Heart Association, had many opportunities to apppreciate the needs and reactions of laymen with respect to diseases of the heart. His book can be very strongly recommended to all intelligent individuals who want to obtain up-to-date information on this important subject. If any criticism at all can be made it is that at times Marvin seems to be somewhat more detailed than the average person might be able to grasp. This may be under-rating the public, however.

The book contains chapters on all types of diseases of the heart and not merely coronary heart disease. It discusses such factors as stress and strain, diet, tobacco, rehabilitation, and controversial subjects such as anti-coagulants. It is, therefore, a very comprehensive work and not merely an essay on health.

The reviewer believes that many physicians will want to recommend this book to their patients.

MAURICE SOKOLOW, M.D.

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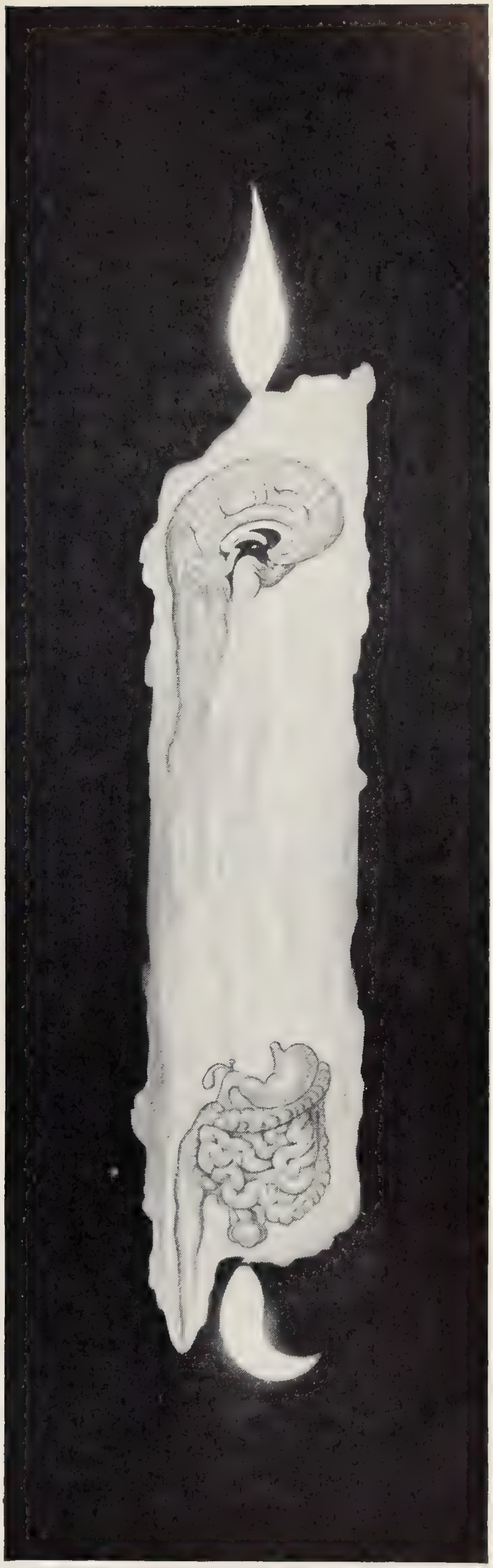

Ideal Drug for Reducing Hinges on Research

Will power is still more potent than any drug to curb overeating and probably will remain so until the appetite mechanism of man is better understood.

This is the conclusion drawn by Dr. Walter Modell, director of clinical pharmacology, Cornell University Medical College, New York, in a report on the "Status and Prospect of Drugs for Overeating" to the Council on Drugs of the American Medical Association.

"Drugs which give assistance along the lines now available provide short-lived symptomatic relief only," according to Dr. Modell's report published in the July 9 *Journal of the American Medical Association.*

"These seem to be useful only as adjuvants to a carefully controlled diet and, in many cases, some sort of psychotherapy.

"Total therapy must consider the psychosocial aspects of eating patterns and the desire to lose weight, as well as the specific psychological or physiological disturbance which has brought on the hyperphagia [overeating].

"In virtually every instance, motivation for losing weight as well as the psychological reasons for overeating are important considerations in determining

(Continued on Page 90)

Solitude Found Beneficial To Psychiatric Patients

(Continued from Page 58)

to be manifestations of a temporary upsurge of anxiety and emotional disturbance which later subsided."

There was a wide range of individual reactions, the psychologists pointed out. While some patients showed no change, they said, others changed for the better with respect to 13 of 20 behavior traits on which they were judged, "suggesting that for them the experience of sensory deprivation had led to broad, generalized improvement."

"The experimental conditions of minimal social interaction and reduced sensory input seem to have induced a social 'stimulus hunger,' manifested behaviorally by generalized efforts to relate and communicate with others," they continued.

"A second major change observed was a less rigid utilization of repressive and inhibitory defenses."

The desire to communicate with others, they added, has been "associated with an improved prognosis for recovery from psychiatric disorder."

The authors of the article are Robert G. Gibby, Ph.D.; Henry B. Adams, Ph.D., and Richard N. Carrera, Ph.D.

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Heart Can Now Be Revived With Closed Chest

Cardiac massage—often a life-saving measure—can now be performed without opening the chest.

A closed-chest technique for reviving a heart that has stopped was described by W. B. Kouwenhoven, Dr. Ing. (Doctor of Engineering), James R. Jude, M.D., and G. Guy Knickerbocker, M.S.E., Johns Hopkins University School of Medicine.

"The real value of the method lies in the fact that it can be used wherever the emergency arises, whether that is in or out of the hospital," they said.

When the heart stops, circulation must be restored promptly or the consequent loss of oxygen can do irreparable damage to the brain or nervous system.

The new technique was worked out in experiments with more than 100 dogs, they said, and as applied to man "requires only the human hand."

The method consists of applying pressure with one hand on top of the other vertically downward on the patient's breast bone about 60 times per minute. At the end of each pressure stroke, the hands are lifted slightly to permit full expansion of the chest.

The pressure on the breast bone compresses the heart between it and the spine, forcing out blood while relaxation of pressure allows the heart to fill, the researchers explained.

At first, they said, it was felt that use of the technique might be limited to children whose ribs were known to be flexible. However, they said they found that the chest of an unconscious adult is "remarkably flexible."

During the past 10 months, the closed-chest method has been used on 20 patients ranging from two months to 80 years of age, they reported, adding:

"All 20 patients were resuscitated and . . . 14 of them are alive without central nervous system damage."

The technique has been "proved to be effective" in cases of heart stoppage and has "provided circulation adequate to maintain the heart and the central nervous system," they concluded.

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CLASSIFIED ADVERTISEMENTS

(Continued from Page 74)

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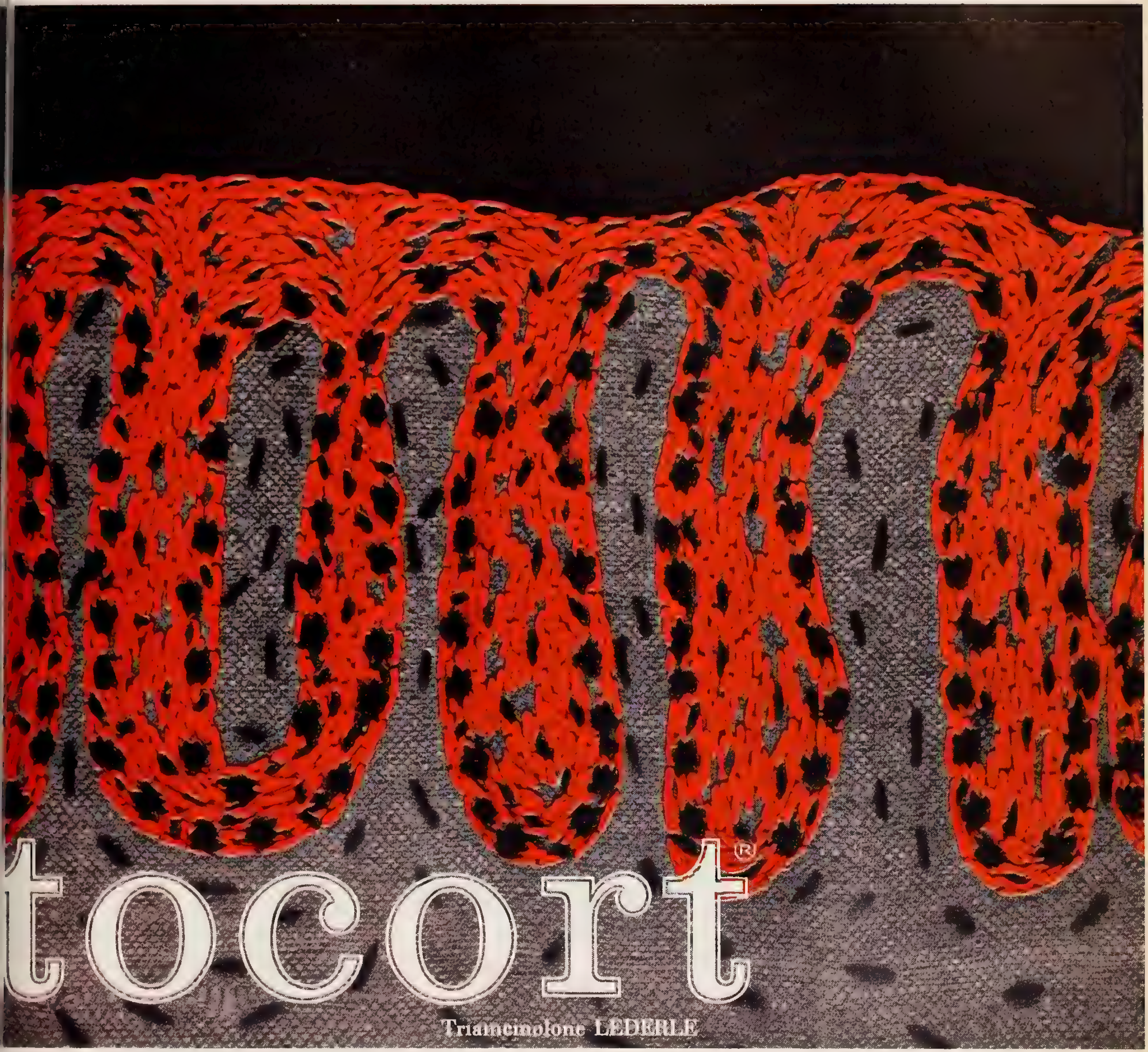

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Ideal Drug for Reducing Hinges on Research

(Continued from Page 68)

the therapeutic regimens which are likely to be effective and to lead to sustained benefits.

"If more were known about the normal appetite mechanism, perhaps something more rational and lasting could be done about it pharmacologically. However, although we have many hypotheses, neither the central site nor the precise mechanisms of normal appetite control are yet definitely established."

Dr. Modell said studies indicate that man has a natural tendency to maintain a balance between caloric intake and energy output, adding:

"The eating patterns of most modern human adults, however, are so distorted that appetite drive and specific food selection appear to have little to do with energy and metabolic requirements."

The culture one lives in has a strong effect on eating habits, he said, and in our present society "social protocol also complicates matters."

"The business luncheon with cocktail, the before-meal highball or two or three, the with-highball canapes, all are part of the mores which consider the slim figure desirable but provide eating customs which make it hard to achieve," he said.

"Although hereditary predisposition appears to be important in some persons, this is often difficult to distinguish from culturally based obesity. Genetic, glandular, and other physical and physiological causes play a statistically small role in obesity, probably in less than 10 per cent of all cases."

Whereas obesity is a consequence of a variety of nonrelated causal factors, Dr. Modell said, there are no drugs to produce loss of appetite "to fit specific disturbances in eating patterns, and there are no useful depressants of the appetite center, wherever it may be."

A large part of Dr. Modell's report was devoted to an examination of stimulating drugs, such as the amphetamines or "pep pills," which he termed the "mainstay" of current pharmacotherapy for obesity.

In the use of this group of drugs, the patient's abnormal drive for food is distracted by a sense of well-being or "lift."

However, he said, these drugs "do not produce

(Continued on Page 98)

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Vitamin B-1	2 mg.	Sodium Molybdate	3 mg.
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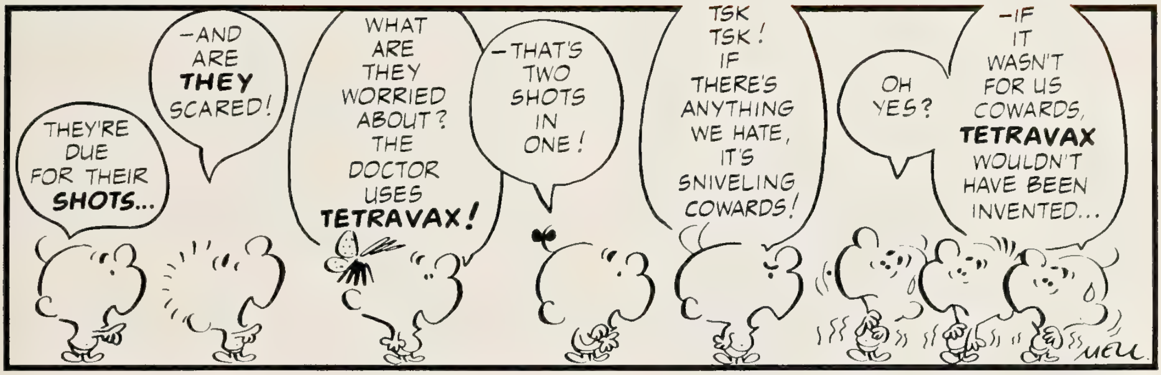
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Ideal Drug for Reducing Hinges on Research

(Continued from Page 90)

appetite suppression in obese persons sufficiently to make them lose weight without simultaneous dietary control."

Undesirable effects caused by stimulants have limited their use, he pointed out, and have thus far appeared to be indivisible from their power to curb the appetite.

Relatively few cases of acute poisoning and serious reactions have been reported as a result of their present large-scale and continued use, he said. However, he warned that they are "not innocuous" and may cause restlessness, excitement, depression, irritability, exhaustion, headache, dizziness, heartburn, nausea, vomiting, and diarrhea.

Habituation has been reported after the continued use of some members of this group, he said, and therefore, are not desirable for prolonged therapy.

Dr. Modell also was critical of phenylpropanolamine which can be sold without prescription and is used in such products as Regimen tablets, Di-Dol, and Rx 121.

"Although there is some evidence that if phenylpropanolamine is given in large enough dosage it will induce some anorexia [loss of appetite], a recent study . . . indicates that, in the usual doses found in these remedies (25 mg. or less), it is no more effective than a placebo," he said.

"In any event, it is likely that, if doses were used which induced anorexia, difficulties would arise due to elevation of blood pressure."

Dr. Modell made these additional points:

—Since an emotional disturbance of some sort is the basis of overeating in many persons, sedation and tranquilization may possibly assist in depression of appetite.

—Bulk has long been suggested as a means of satisfying the appetite of the obese. Unfortunately, cabbage, lettuce, and other articles of the typical grassy, high-bulk, low-calorie diet do not appeal to the average overeater who perversely prefers to distend his stomach with undiluted fat, protein, and carbohydrate.

—Many expensive obesity "cures" depend on an exhibition of weight loss to entice the patients into continuing treatments, especially in expensive salons. Cathartics, diuretics, and salt restriction are often used in such schemes, for, through dehydration, they induce some weight loss very promptly. However, in the obese patient, weight loss by water excretion is both meaningless and senseless. It does not represent a loss of fat.

—There is no reason to believe that vitamins, minerals, or sweets (e.g. Ayds, R.D.X.), containing nutritional elements, have any merit in the treatment of obesity.

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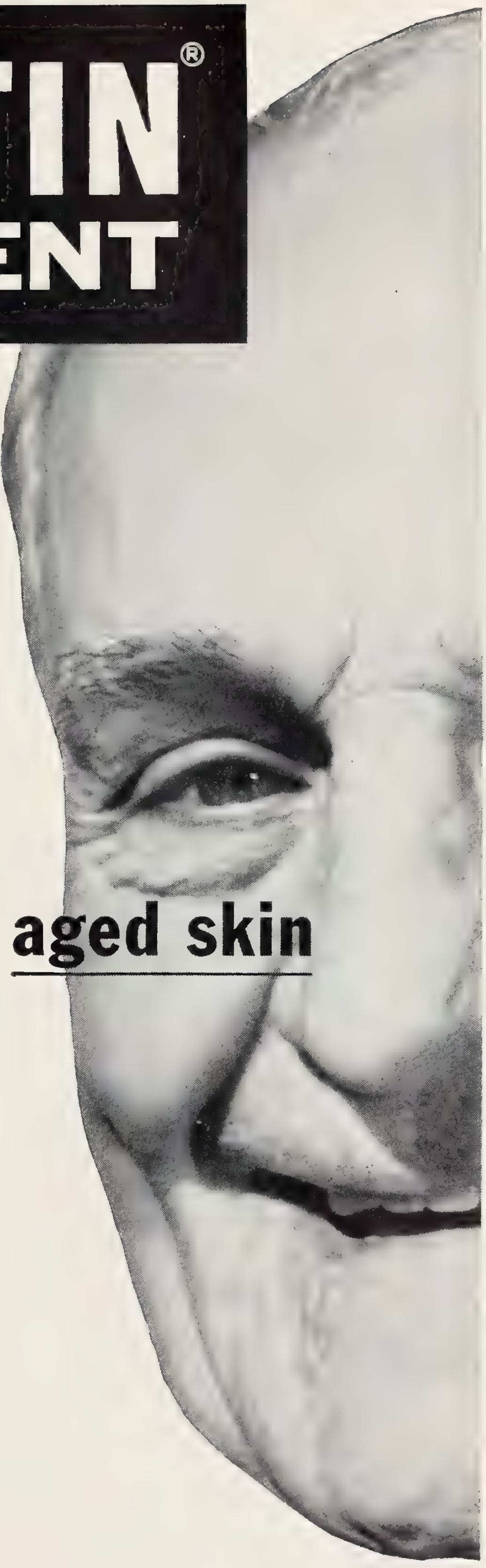

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Pesticides, Farm Chemicals Pose Health Hazard in California

Pesticides and agricultural chemicals are creating "an increasingly important public health problem" in California, state health officials have said.

The warning was contained in an article in the August *Archives of Environmental Health*, published by the American Medical Association.

Goldy D. Kleinman, M.A.; Irma West, M.D., M.P.H., and Marguerite S. Augustine, M.P.H., of the State Department of Public Health, Berkeley, Calif., said "there has been an almost steady increase since 1951 in the number of reports of occupational disease attributed to pesticides and agricultural chemicals."

In 1957, they reported, there were 749 reports of occupational disease attributed to chemical agents which include insecticides, fertilizers, soil additives, and other materials used to promote growth or to destroy plant or animal life when necessary. There was one death recorded.

"The number of pesticides and agricultural chemicals in use has been increasing for years," they said.

"Some of these chemicals can cause serious illnesses and even death when proper safeguards are not taken. Others are not quite so hazardous, but still may cause disability unless used with care.

"Organic phosphate chemicals . . . are among the most hazardous materials used as pesticides. Organic phosphate chemicals may enter the body directly through the skin, as well as by inhalation and swallowing.

"Since many persons find the concept of poisoning through the skin hard to understand, workers often fail to wear protective clothing when applying such chemicals and to wash themselves thoroughly afterward."

Nearly one-third of the 749 cases were attributed to organic phosphate pesticides.

"Other pesticides used for crop protection and also in home and garden may contain nicotine, fluorides, and arsenic compounds; use of any of these can be very hazardous," they continued.

Agricultural workers made up nearly 60 per cent of the 749 cases. However, the authors reported that farmers were relying more and more on trained operators to apply pesticides, partly because of the hazard involved.

"If health and life are to be safeguarded, there must be widespread education in the proper use of these chemicals," they concluded.

It is estimated that California accounts for about one-fifth of the total quantity of pesticides used in the United States.

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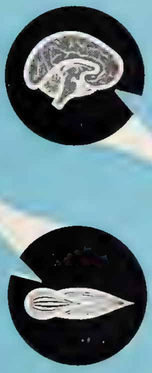

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Antibody Mechanism May Be Cause of Diseases

The theory that the antibody-producing mechanism in man can cause diseases is gaining support and may be the key to a better understanding of rheumatoid arthritis and other disorders, the *Journal of the American Medical Association* has said.

The autoimmune process, man's natural resistance to disease, consists of the ability to produce antibodies to fight off the infection.

An editorial in the August 13 *Journal* cites accumulating evidence that abnormal antibody-producing cells can cause Red Wolf Disease, technically known as systemic lupus erythematosus (SLE).

The evidence "seems convincing" and may mark "the beginning of a new era" in defining the causes of other diseases, such as rheumatoid arthritis, Addison's disease, and chronic pancreatitis, the *Journal* commented.

The *Journal* referred to an editorial on Red Wolf Disease by Dr. William Dameshek, professor of medicine, Tufts University School of Medicine, Boston, in the August *Archives of Internal Medicine*, published by the A.M.A.

Dr. Dameshek said, "We believe there is sufficient evidence at hand to call SLE a complex autoimmune disorder with irregular involvement of various constituents of the blood and small blood vessels, thus resulting in a highly protean [changeable] disorder.

"Involvement at the beginning may be limited to one tissue, one organ, or one blood cell constitutent, with progressively greater involvement as time goes on. Finally, there is a widespread generalized disease with death ordinarily due to severe renal [kidney] disease."

Dr. Dameshek said the reasons for groups of abnormal antibody-producing cells to develop are "obscure."

Red Wolf Disease is a chronic disorder, more common among women than men. It is not rare and can cause death. The symptoms include fever, arthritis, joint pain, and skin rash.

Four-Day Artificial Respiration Saves Infant's Life

Prolonged artificial respiration has been credited with saving the life of a newborn five-pound boy.

An automatic respirator was used to aid the infant's breathing for four days at Strong Memorial Hospital, Rochester, N. Y.

The case is reported by Drs. Frank J. Colgan, Svend Eldrup-Jorgensen, and Robert M. Lawrence in the August 6 *Journal of the American Medical Association.*

(Continued on Page 23)

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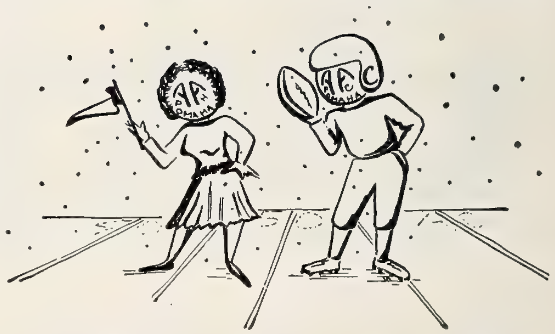

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Bile Surgery Not Always Bar to Motherhood

An operation of the bile duct should not be a bar to pregnancy if the patient's condition is generally good, three Mayo physicians said recently.

The conclusion was based on a study of 34 pregnancies among 24 women who had been operated on for a contraction or obstruction of the bile duct, the tube which carries digestive juices from the liver to the small intestine.

Fourteen of the 24 women reported no ill effects from their pregnancy and delivered a full term normal infant, according to Drs. Waltman Walters, John A. Ramsdell, and Carl E. Johnson, Mayo Clinic, Rochester, Minn. All but two had obtained excellent or good results from the operation.

"We believe that patients desirous of becoming pregnant after operations for stricture of the bile duct should not be discouraged from doing so, provided that their general condition is satisfactory and marked symptoms of biliary obstruction or cirrhosis [a disorder commonly affecting the liver] are not present," they reported in the September 3 *Journal of the American Medical Association.*

The three physicians also said that the pregnancy itself did not seem to be jeopardized by previous operation on the biliary tract and the course of labor apparently was not complicated by the previous operations for biliary stricture.

The authors said an "unsubstantiated impression" had existed that pregnancy after surgical repair of the bile duct might cause a flare-up of biliary complications, such as hepatitis, a liver ailment associated with biliary obstruction.

Four-Day Artificial Respiration Saves Infant's Life

(Continued from Page 20)

The efficacy of prolonged use of mechanical respirators for adults with breathing difficulty has long been recognized, they said, but the use of this procedure in the newborn apparently has never been reported.

The baby developed respiratory failure shortly after a normal birth. Artificial respiration was achieved by placing a tube, connected with the respirator, in the infant's windpipe through his mouth.

Artificial respiration was halted 48 hours later. But without aid, the infant tired and spontaneous breathing again stopped. Use of the respirator was resumed immediately and continued for another two days when it was found that the baby was able to breath on his own.

"Thereafter, improvement was steady until discharge 10 days later," they reported. "Serial examination, made until the infant reached three months of age revealed apparent normal psychomotor development."

Freezing Makes Blood Storage Practical for Four Years

A deep-freeze method of preserving human blood for four years has been proved safe, reliable, and workable, a group of researchers at the U. S. Navy Hospital, Chelsea, Mass., has reported.

The process, described in the August 13 *Journal of the American Medical Association*, could revolutionize the operation of blood banks, now capable of storing blood for only three or four weeks.

It also would lead to these advances in providing blood for transfusions:

—Reduce waste due to spoilage of unused blood.

—Assure adequate supplies of rare types of blood without resorting to emergency appeals, and allow persons with rare types to bank their own blood for future use.

—Alleviate the shortage of blood for operations requiring large amounts, such as open-heart surgery.

—Enable the mass stockpiling of blood that would be needed in the event of a nuclear attack, although this must await sufficient facilities to simultaneously process many units of blood.

The blood research program was begun at the Chelsea hospital in 1956 under the joint supervision of the Department of the Navy and the Protein Foundation, Boston. By March 1959, the research project had become a practical reality, with the frozen-processed blood being used as the standard blood for transfusions at the hospital.

The experiment was based on the theory that glycerol, an alcohol, could prevent the damaging formation of ice crystals in red blood cells during freezing and thawing. The Cohn fractionator, a machine developed in 1951 to separate blood into its component parts, was used to add the glycerol to the blood cells and to remove it after frozen storage.

The glycerolized blood cells were stored in three deep-freeze lockers, two at –80 degrees centigrade and one at –120 degrees centigrade. After storage, the cells were reprocessed into reconstituted whole blood or other liquid form for transfusions and placed under ordinary refrigeration.

"The equipment and techniques developed for this process have been found to function as satisfactorily at a clinical level as they had under research conditions," according to Capt. Lewis L. Haynes, MC, U.S.N., and five fellow researchers.

"Of the 1,014 units used in transfusions, 446 units had been stored 3 months or less; 414 units had been stored from 3 to 6 months, and 154 units had been stored from 6 months to 44 months. No relation was observed between the time of storage and clinical effectiveness.

"It would appear from these studies and others in progress that these blood cells kept in a frozen . . . state for as long as 44 months have almost normal behavior and survival."

Use of the deep-freeze blood was marked by an "exceptionally low" rate of unpleasant reactions among recipients, the authors reported. The over-all incidence of reactions was "10 times less" than the general reaction rate for conventionally processed whole blood.

Furthermore, there was some evidence of a reduction in the incidence among recipients of hepatitis, a liver disease which can be transferred from a donor via transfused blood. The authors speculated that the separation of the red blood cells or the addition of glycerol had "washed out" or "inactivated" hepatitis viruses since the disease was known to be present in the donor population. But they stressed the evidence was inconclusive and the matter required further study.

Another distinct advantage of the freezing process is that the breakdown of the blood into components made it possible to tailor the content of the blood to the needs of the recipient. For example, blood from which the clotting elements have been removed has been found to be suitable for transfusions in all types of vascular surgery.

The cost of processing was estimated at $14.10 to $16.40 per pint, which could be reduced by production line techniques.

In an accompanying editorial, Dr. Carl V. Moore, St. Louis, a specialist in the study of blood, said "formidable" difficulties had been overcome in putting the deep-freeze process into operation.

"The most important single fact about the Chelsea experience is that the methods have been shown to work in the practical operation of a large transfusion service," he said.

"Current practices are certainly not the final ones that will evolve. The probing for improvement in techniques should be continued until the long-term storage of blood becomes a practical reality in many centers."

Co-authors of the report are James L. Tullis, M.D., Hugh M. Pyle, M.D., Commander Mary T. Sproul, MSC, U.S.N., Lt. Stanley Wallach, MC, U.S.N.R., and Capt. William C. Turville, MC, U.S.N.

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Average Price of Drug Prescription In U. S. Today is $3

The average price of a drug prescription in the United States today is about $3, according to Dr. Austin Smith, president of the Pharmaceutical Manufacturers Association.

"More than 60 per cent of all prescriptions cost $3 or less, and only about 1 in 100 prescriptions costs as much as $10," the drug official wrote in the August 13 *Journal of the American Medical Association.*

In a special communication to the *Journal,* Dr. Smith discussed the cost of drugs and other points debated during hearings before the Senate Subcommittee on Anti-Trust and Monopoly.

"The American consumer today, despite all that has been said about drug prices, actually is spending about the same part of his income on drugs as in 1939, before most of our specific high potency drugs were available," he said.

"In a period of continuing inflation, the wholesale price of drugs consistently since 1948 has resisted upward pressures—rising only 3 per cent in the past 10 years. This has occurred at a time when wholesale prices of all industrial products were soaring 22 per cent. It has occurred in a period when drug industry costs, such as wages and construction, were spiraling."

Dr. Smith said the cost of raw materials in the drug field is "relatively slight" but the producer's cost must also cover production expenses, selling expenses, research, general and administrative expenses, taxes, licenses, royalties, reserves for depreciation, quality control, and advertising and promotion.

(Continued on Page 37)

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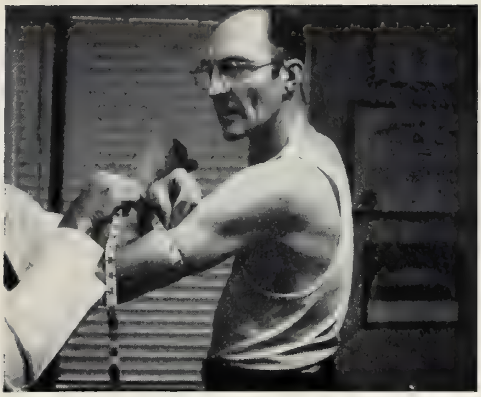

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Average Price of Drug Prescription In U. S. Today is $3

(Continued from Page 32)

Research, he said, "represents perhaps the major risk in the industry.

"The chance that any given research involving a new potential medicine will be successful stands at 2,865:1 against the manufacturer.

"Last year the drug industry spent almost 200 million dollars in the search for new medicinal agents."

A large part of this research activity was in fundamental investigation or basic research, consisting of projects which are not identified with specific products or process applications, but rather have the primary objective of adding to over-all scientific knowledge, he said.

"In the short period of a quarter of a century, disease after disease has been erased from the dread list of cripplers and killers," he continued. "This has been made possible in large part by discoveries and developmental activities of the drug industry—by chemotherapy that today permits a physician to treat many specific organs and to conquer many specific diseases with the precison of a surgeon using a scalpel.

"Every major advance of the United States drug industry has also been accompanied by astronomical dollars-and-cents savings to the American people—from vast reduction in medical expenses made possible by rapid cures for illnesses and the resultant shorter length of hospitalization to the increased productivity of those to whom new drugs have made cure possible."

Turning to advertising and detail men, representatives of drug firms who acquaint physicians with new products, Dr. Smith said:

"Advertising, supported by detailing, is the fastest means our free enterprise system has produced to guarantee that the lag between availability of a drug product and its use in treatment is held to a minimum.

"Any time lag between the approval of a new product and the doctor's knowledge of that product is intolerable where health and often life itself are at stake."

The use of brand names is fundamental to a successful system of competitive distribution, Dr. Smith pointed out, adding:

"Competitive distribution is, in short, a system which insures that the right drug will be available at the right place and at the right time; that it will be prescribed by a physician who knows about it, trusts it, and knows how to use it, and that it will be dispensed by a highly trained, professional pharmacist. The most expensive drug in the world is the one that is not available where and when it is desperately needed."

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Formula for Theragran-M on Page 88

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1-41 a list of the above references will be supplied on request.

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Americans have been reminded that taking an excessive amount of vitamin supplements can be harmful.

The *Journal of the American Medical Association* in an editorial said "the fallacy seems widely disseminated that every healthy individual must consume multivitamin pills" to obtain an adequate diet.

"On the contrary," the *Journal* said, "only in a deficiency state or an anticipated deficiency state are vitamin supplements necessary.

"Under such circumstances it is the responsibility of the physician to recommend supplementary vitamins, and the decision regarding dosage and kind of vitamins must reside in the physician . . ."

If single or multiple vitamins are taken without sound clinical indications, trouble may appear, the editorial said.

An overdose of vitamin A can lead to loss of appetite, irritability, skin eruptions, or enlargement of the liver, it said, and too much vitamin D may lead to gastrointestinal symptoms.

The position of the A.M.A. on vitamin supplements, as stated by its Council on Foods and Nutrition in January 1959, is that "all the nutrients essential to the maintenance of health in the normal individual are supplied by an adequate diet."

Home Care for Cancer Patients Shortens Hospital Stay

The home care program of George Washington University Cancer Clinic in Washington, D. C., is reducing the time patients have to spend in a hospital by many months, according to the program's director.

Writing in the August 6 *Journal of the American Medical Association,* Dr. Cyril A. Schulman said the program's "primary aim was to provide, in a patient's own or nursing home, medical, nursing and social service care of the highest obtainable quality to cancer patients who are too ill to attend the clinic but do not require continuous hospital care."

The program utilizes the services of physician, nurse, and social worker.

Visiting physicians are responsible for the daily care of patients and make routine calls on the basis of the patient's need. Visiting nurses provide further care as directed by the physician and families are instructed in the aid they are able to give.

The job of the social worker is to establish the family's realization of the patient's extreme illness and at the same time help them to control their emotions so that each may work to the patient's benefit.

(Continued on Page 58)

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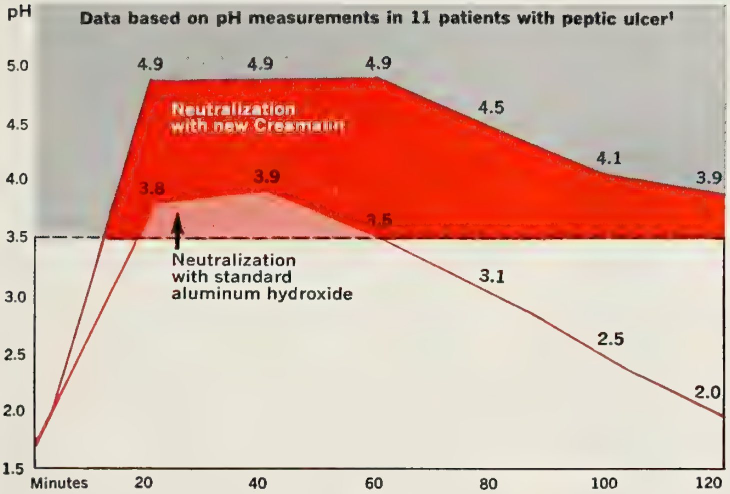

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1. Data in the files of the Department of Medical Research, Winthrop Laboratories. **2.** Hinkel, E. T., Jr.; Fisher, M. P., and Tainter, M. L.: **J. Am. Pharm. A.** (Scient. Ed.) 48:384, July, 1959.

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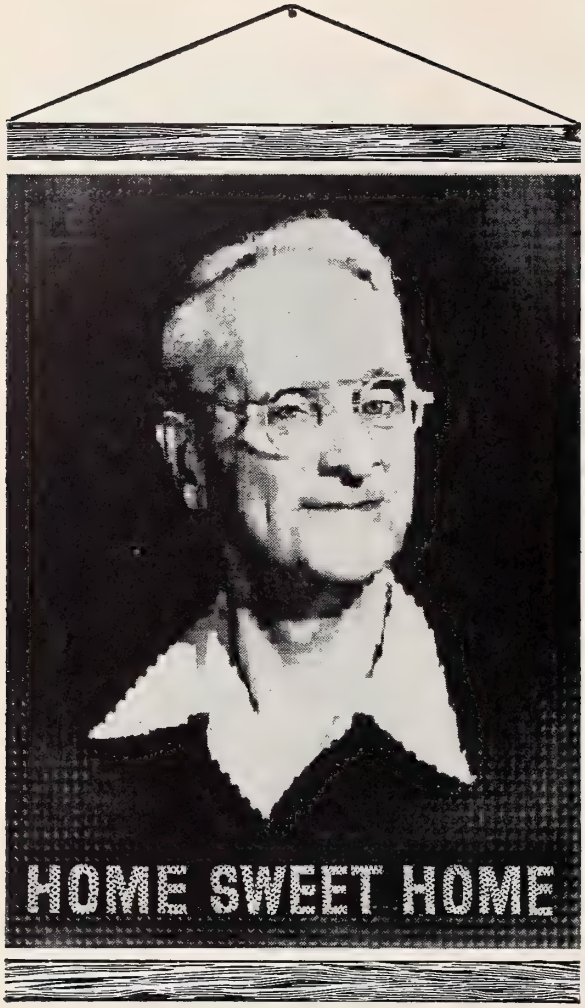

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REFER TO PDR Page 663

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Live Poliovirus Vaccine Successful In Pre-School Age Trial

It has been reported that live poliovirus vaccine administered to 850 pre-school children in Philadelphia proved efficacious in conferring immunity.

The "first study in the United States of the use of living attenuated poliovirus vaccine in a substantial number of susceptible children living normally within a large city" was reported in the August 27 *Journal of the American Medical Association.*

"These living attenuated poliovirus vaccines [Koprowski and Sabin] appeared to be practical immunizing agents of high efficacy," according to the *Journal* article.

The study was conducted from January to July, 1959, in 2 of the 10 health districts of Philadelphia. The two districts were selected because of a much higher rate of polio in 1958 than the other districts.

The children given the orally-administered vaccine ranged from 1½ months to six years of age.

"Vaccination effected a substantial rise in antibody titer [immunity] against all three types of poliomyelitis virus in every age group, regardless of the previous state of immunity," the article said.

"The children came from about 830 households scattered through the heart of the city. No case of poliomyelitis occurred in these households, although they included 991 children in a highly susceptible age group."

The study "was designed as an important addition to the investigations of the action, effectiveness, and safety of living attenuated poliovirus vaccines that have been conducted in the United States and abroad since 1949," the authors said.

However, they said the study was too small to "prove the safety" of the vaccines.

Home Care for Cancer Patients Shortens Hospital Stay

(Continued from Page 42)

The program, begun nine years ago, was patterned after a similar one at Montefiore Hospital in New York City, Dr. Schulman said.

The monetary savings to the community have proved a very considerable advantage, he said, but "the advantages to the patients are much more important.

"Prior to home care programs, most patients were confined to the hospital or similar facilities for many months," he said. "Although measurable proof is hard to obtain it is felt that the patients exhibit greater contentment at home and maintain better physical health for a longer time.

"Apparently such things as devotion, comforts of home, and catering to one's whims of diet do make for a decided difference in the patient's health and attitude"

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162-60

Rate of Hardening of Arteries Important in Heart Attack

A slightly faster than average rate of hardening of the largest artery in man is associated with a "striking increase" in the incidence of heart attacks, two pathologists have said.

Drs. Sigmund L. Wilens and Cassius M. Plair of the New York Veterans Administration Hospital, New York City, found this association in a study of the development of hardening of the aorta (aortic sclerosis) in 285 men at autopsy.

The study is reported in the August *Archives of Pathology*, published by the American Medical Association.

While the degree of hardening of the aorta is not an infallible guide to the severity of generalized hardening of the arteries (arteriosclerosis), they said, there is a "close association."

By comparing the aortas of men in certain age groups, for example, 45 to 49, the researchers were able to see how far the disease had advanced in the average man in that age group.

The study showed that the incidence of myocardial infarction, the type of heart attack caused by a clot in the coronary arteries, was 5½ times as great in men with aortic sclerosis which had advanced 15 or more years beyond the average for

(Continued on Page 64)

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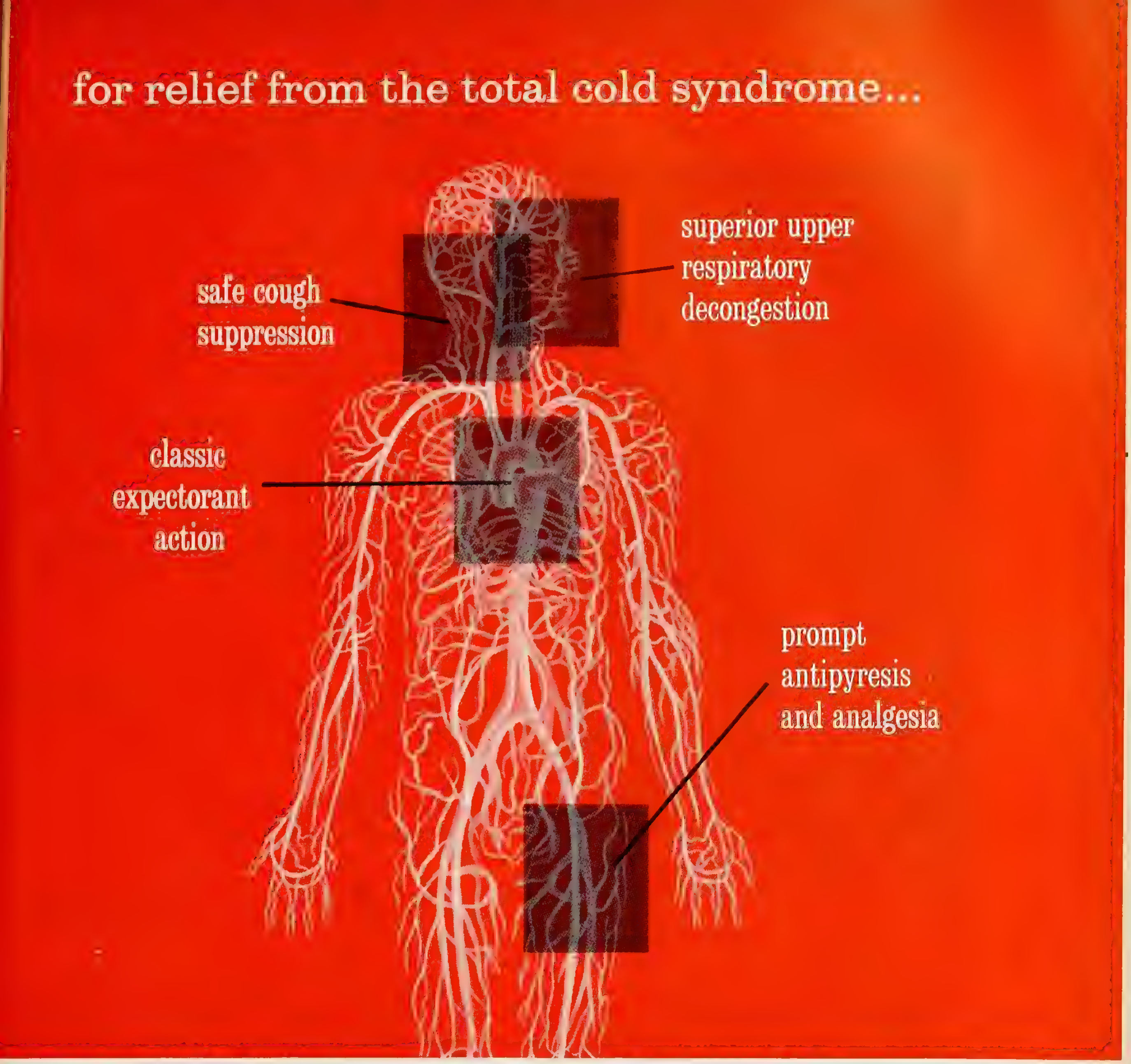
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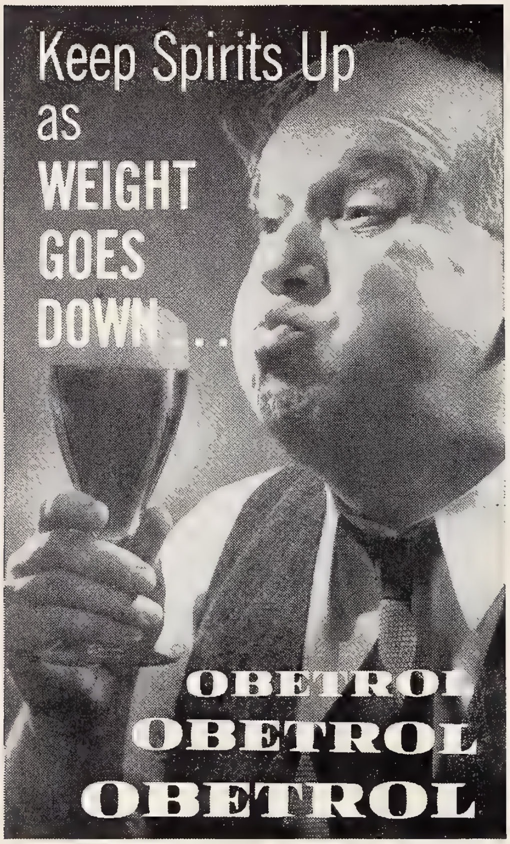

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REFER TO PDR Page 753

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Drug Inhaler Offers Quick Relief From Migraine Headaches

A drug inhaler has been termed "a very useful agent" in treating the symptoms of migraine headaches.

The device, known as the Medihaler-Ergotamine, was described by Dr. Robert E. Ryan of St. Louis in the September *Archives of Otolaryngology*, published by the American Medical Association.

The dispenser delivers measured doses of ergotamine tartrate in the form of an aerosol. The drug is commonly used to relieve the pain of migraine headaches.

Dr. Ryan said 44 of 60 patients who used the Medihaler obtained complete or partial relief. He said some failures probably were caused by the improper use of the device.

The Medihaler is small enough to be carried in a pocket or purse, he said, and can be used immediately wherever an attack begins. The value of early administration of the drug is well-recognized, he added.

The effectiveness and speed of relief are comparable to that obtained by injection, he said. A further advantage is the smaller dosage required by inhalation than by other routes of administration, he said.

Rate of Hardening of Arteries Important in Heart Attack

(Continued from Page 60)

his age compared with men in which the development of the disease was 15 or more years behind the average.

"Even a slight increase above average in the rate of development of arteriosclerosis causes a marked increase in the incidence of myocardial infarction."

They drew these further conclusions from the study:

—In the average man (about one out of two) arteriosclerosis progresses to about the same extent throughout life.

—In exceptional persons (about one in eight) the process is significantly retarded.

—In about the same proportion it is accelerated.

—The gradual enlargement of the arteries with age is sufficient in the average person to maintain an adequate blood flow despite the thickening of the lining of the arteries.

—Arterial blood flow is impaired when the thickening process precedes enlargement of the arteries in the young man or progresses at a more rapid than average rate in the middle-aged. A young man with a greater than average degree of hardening of the arteries may be more vulnerable to a heart atttack than an older man with enlarged arteries that can accommodate a much more severe case of arteriosclerosis.

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A Program for Mental Hygiene in California

DANIEL BLAIN, *M.D.*, Sacramento

I REPRESENT the Department of Mental Hygiene, and Governor Edmund G. Brown and his administration. It is a pleasure to tell you that I have his solid support and the help of all other departments.

The time and attention of the Council of the California Medical Association is requested in behalf of the Department of Mental Hygiene because it spends 140 to 150 million dollars of state money, uses 20 per cent of all state employees (20,000) including 550 physicians, is responsible for 85,000 mental patients at some time during 1960, operates a physical plant of 700 million dollars replacement value (at $1,500 a bed), is a major factor in the whole health situation in the state and potentially could influence the health situation of the whole nation, for example in its research findings, operational methods, and pattern of sharing responsibility with various groups and with individuals and insistence on the development of more private resources.

The purpose of this report is (1) to present information concerning the program, plans, and thinking of the Department of Mental Hygiene; (2) to secure endorsement of the goals and methods underlying this program; and (3) to lay the groundwork for continued and increasing cooperation and mutual assistance between the Department and the C.M.A. and its members.

The appeal is made on the state level (1) to share responsibility for over-all planning to meet the total psychiatric needs of the citizens—and bring others into the planning process (i.e., psychiatric societies and other departments); (2) the development of sound departmental policy; (3) support on legislation and appropriation; (4) advice and close association with staff and appropriate committees.

While the Department of Mental Hygiene cannot undertake to meet all the mental health needs of the citizens, it should make the best possible use of all its own resources, and at the same time help others to make the most of theirs. To these ends it should

- **Give encouragement and assistance to persons engaged in prevention of mental disorders, without trying to operate such services.**
- **Encourage and help persons engaged in the preservation of the human strengths that increase resistance to mental breakdown, without trying to operate such services.**
- **Encourage and help persons outside the department who diagnose, treat and rehabilitate patients with mental disorders if these services meet the requirements of modern psychiatric treatment.**
- **Continue operating hospitals at current level of bed capacity, clinics and related services for diagnosis, treatment and rehabilitation, moving toward levels of service in keeping with modern psychiatric standards and the growing population of the state.**
- **Continue research and training within the Department and assist others in such programs outside the Department.**

On the county level, a request is made for a formal advisory relationship with county societies; combined investigation of the psychiatric needs and resources of every county; familiarity and interest

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Director of the State Department of Mental Hygiene, Sacramento 14.

Presented to the Council of the California Medical Association, September 10, 1960.

in operation of this department and its representatives; help in raising the level of treatment available for patients from the county going to a state hospital, and assistance to them on return; sponsoring of training courses in psychiatry; active relationship to legislators and county government in behalf of the department, public education and public relations.

On the individual level, the department hopes for the active interest of every physician in its program, the use of part time services, participation in local psychiatric and mental health efforts, and assumption of greater treatment responsibility for psychiatric disorders in his patients to the end that fewer patients will be sent to distant state hospitals.

The general psychiatric situation in the nation and in California is characterized in part by considerations such as these:

In the past decade psychiatric treatment has undergone decided change. Additional techniques have been developed for use with both inpatients and outpatients. There has been a considerable increase in the number of psychiatrists in private practice, greater familiarity with psychiatric knowledge on the part of non-psychiatric physicians, and the development of psychiatric beds in local public and private general hospitals. There has been the growth of outpatient clinics, day hospitals, half-way houses and social rehabilitation services, and the development of a better understanding by the general public of the nature of mental illness with subsequent reduction of the stigma attached to such illness and greater acceptance of persons with mental disorders. A program must be responsive to this increased public concern about mental illness and must take bold advantage of these psychiatric advances. At the same time it must remain keenly aware of the many and varied demands on state resources and tax revenues.

In order to summarize my review and conclusions, I should like to present:

1. The scope of the problem;
2. Current strengths and weaknesses of the Department of Mental Hygiene;
3. A comprehensive mental health plan making maximum use of public and private resources;
4. A proposed program for the Department of Mental Hygiene consistent with such a review.

SCOPE OF THE PROBLEM

Recent research has indicated that 10 per cent of all citizens have sufficient symptomatology to warrant a diagnosis of mental disorder.* This means that in the United States there are approximately 17 million mentally ill, and in California 1.5 million. About 20 per cent are in mental hospitals or in general hospitals with psychiatric units or are seen in the private offices of physicians, chiefly psychiatrists, and in outpatient clinics. Some are in general nursing homes and some are being treated for chronic illnesses concurrent with their psychiatric difficulty. About 80 per cent, therefore, are still in the community, looking after themselves, with varying degrees of disability and dependence on others.

The full scope of the field of mental health, however, involves more than the treatment of the mentally ill. It includes four major areas:

1. *Primary prevention* of mental disorders by such techniques as appropriate prenatal and obstetrical care to avoid brain damage; appropriate attention to the medical care and diet of infants to avoid infant syphilis and cretinism; immunization against communicable diseases that may produce brain disturbances; and, on the broadest scale, the relief of stress of people whose emotional reactions are related to the stress stimulant.

2. *Promotion of healthy, well-adjusted citizens* with strength and resistance to mental breakdown through such established institutions as home, school, church, and job.

3. *Discovery, diagnosis, treatment, and rehabilitation* of mental disorders by means of inpatient, outpatient, and transitional facilities (both public and private).

4. *Promotion of the necessary resources* of knowledge (through research), of skilled personnel (through training and recruitment), and of improved inpatient and outpatient facilities (through architecture and planned construction).

For the State of California, the immediate future will likely be marked by:

1. Continued increase in the general population.
2. Increased demands by a better informed and knowledgeable people for more psychiatric services as a reflection of the developments in the field of mental health throughout the country.
3. Demands for outpatient clinic staffs and hospital staffs to give much more of their time and energy outside of the hospital and clinic for various community services.
4. Increasing demands on the relatively few personnel available to develop local services as part of the Short-Doyle program.
5. A demand for services closer to the home of the patient.

This total job can only be done by the utilization of all resources working in a cooperative fashion. This is not only a matter of necessity but represents the soundest approach. It calls for the united efforts of the person who is sick, his family, his friends and associates, his medical community, plus the resources of local, state, and federal governments. The program of the future, therefore, will recognize the existence of current resources, including the large mental hospital, utilize the most scientific manner, and develop other resources in keeping with the best available scientific knowledge.

---

*Pasamanick, B., Robert, D. W., Lemkau, P. V., and Krueger, D. E.: A survey of mental disease in an urban population—Prevalence by age, sex and severity, Am. J. Pub. Health & Nation's Health, 47:923-929, Aug. 1957.

This calls for the building up of services which: (1) Permit prompt hospitalization when hospitalization is needed, but (2) permit treatment of the patient while he is living at home and continuing on his job in his usual surroundings, and (3) allow for the prevention of mental disorder and the promotion of mental health.

CURRENT DEPARTMENTAL STRENGTHS AND WEAKNESSES

Examination of the operations of the Department of Mental Hygiene has revealed certain areas of relative strength and others of relative weakness.

A real asset has been the support by the Administration, the Legislature and the people of the State, which has resulted in progressive strengthening of the Department's program. The amount of money expended by the State per patient per day has increased from $1.10 in 1946 to $5.85 in 1959, an increase of more than 500 per cent. Despite this, the overall expenditure per patient day is still only about 20 per cent of that spent in general hospitals per patient day.

The Department of Mental Hygiene may be justifiably proud of its record in a rapidly expanding state. Since 1950 the population of California has increased by 49 per cent, while during this period the number of beds in the Department of Mental Hygiene has increased by only 14 per cent. In 1950 the Department operated 303 beds for the mentally ill for each 100,000 of the general population, while in 1959 it operated only 246 beds per each 100,000 of the general population. If the rate of 303 per 100,000 population had been maintained, this would have necessitated an additional two large mental hospitals with a total of 8,500 beds.

During the past dozen years, a steadily increasing number of patients has been admitted to departmental facilities each year. Admissions have risen from 8,000 during 1946 to 23,500 during 1959, but releases have kept pace with this tremendous increase: from approximately 8,000 persons released in 1946 to 24,000 in 1959.

California has one of the best aftercare programs of any state, especially in our Bureau of Social Work program. The number of patients on indefinite leave has increased from 5,100 in 1946 to 10,000 in 1959. The family care program is especially strong and the number of patients in this program, since its inception in 1946, has steadily increased to approximately 1,500 in 1959.

The construction program is well advanced. Since 1946, the State has spent a total of $200,000,000 in Department of Mental Hygiene construction, and our buildings are generally in good condition and in a good state of safety against fire. Despite this ambitious construction program, 86 wards remain to be modernized, and some special units remain on the immediate building schedule. The remodeling of wards is progressing at a rather slow pace, and this has been one of the causes of the loss of accreditation to certain of our hospitals. Some of our buildings are too large, with a subsequent reduction in certain aspects of professional and humanitarian care of patents. In some cases, architectural design has been sacrificed for short-term economy, as in the case of the installation of fixed windows which prevent a natural flow of fresh air in a new building which is not air conditioned. Furthermore, such economy is being considered in other buildings about to be built.

The Department has a strong nucleus of competent, well-trained personnel who are aware of the needs of patients and of most recent treatment techniques. The total number of personnel has increased from 8,000 in 1946 to 19,000 in 1959, an increase of 210 per cent. Despite this, in some part of every hospital, shortages of personnel leave many patients without all the professional help and nursing supervision they require. The Department's accident rate, including compensable illnesses, costs $800,000 a year, with hidden costs bringing this up to a total of $3,000,000 yearly. Recent staffing studies indicate that personnel who are in direct contact with patients are at approximately 40 per cent of the necessary level to provide minimum adequate care and treatment. Furthermore, salaries, while comparable to those of other states, are sufficiently below competitive levels within the State of California to make recruitment difficult and to result in a rapid turnover, especially of the more highly-trained and qualified personnel.

A good start has been made in the direction of a well-planned in-service training program for all personnel and a well-planned research program. Since 1943, with the establishment of the Langley Porter Neuropsychiatric Institute, the Department has been interested in research and training, and during the past two years this interest has been considerably expanded into planned programs in both fields. The new buildings of the U.C.L.A. Neuropsychiatric Institute will be available in 1961. Research and training are going on in every hospital and clinic.

Every hospital has a number of strong points in its program. The care, treatment, and control of tuberculosis among hospitalized patients is at a very high level. But the allotment for general drugs and medical supplies is less than is needed for good, modern general medical care, and, as more physicians from the community come into our hospitals to consult with us about our patients, the demand for drugs and medical supplies is increasing.

Our medical records on patients are inadequate. Inspectors from the Joint Commission on Hospital Accreditation have usually been most critical of this part of our hospital operation. In general this is due to a shortage of clerical personnel.

On the other hand, our Bureau of Patients Accounts has shown increasing collections, with resultant profit, and our guardianship program is unique and most helpful to patients.

Through all the Department's operations there is reflected a pervading question: Is the authority of the Director of Mental Hygiene commensurate with his responsibilities? The administrative processes, both within the Department and between Mental Hygiene and other state departments, urgently require critical study. A reasonable increase in delegation of authority and easier administrative operation must be permitted in order to free top personnel for constructive and imaginative thinking and planning.

All in all the State of California can be justly proud of its achievements and strengths. By the same token it must look carefully at its deficiencies and weaknesses with a view towards correcting and strengthening its part in the total mental health picture of the State. This is a current problem in face of the almost overwhelming population increase each year.

A COMPREHENSIVE MENTAL HEALTH PLAN

It is the thesis of the Department of Mental Hygiene that the broad scope of the mental health field requires a cooperative sharing of responsibilities by: (1) Private individuals, organizations, and institutions in the health and welfare fields; (2) federal, county, and municipal government; (3) state government. The state government of California may exercise its responsibilities in mental health chiefly through the Department of Mental Hygiene, but it supplements this with activities in the Youth Authority and Corrections, in the Departments of Public Health and Social Welfare, in the Departments of Education and Veterans Affairs, and in other state agencies and units. All provide services which conserve and increase the strengths of people; all actively evaluate their operations, and the evaluation cannot but increase our knowledge and improve our services and facilities in the broad field of mental health.

The State Department of Education provides vocational rehabilitation and the Departments of Mental Hygiene and Corrections and the Youth Authority are engaged in the broader gamut of diagnosis, treatment, and rehabilitation of the mentally disordered, both by direct operation of services and by financial aid and consultation to others providing the services (as in the Short-Doyle Act).

Federal funds and consultation are available to help in psychiatric and mental health research and training. Federal funds and consultation to local education and public assistance programs contribute to the development of a citizenry which is more resistant to mental breakdown. The Veterans Administration and the Office of Vocational Rehabilitation provide diagnosis, treatment and rehabilitation of some mentally ill and mentally retarded persons. The Hill-Burton Act and the National Mental Health Act stimulate the local development of community treatment services, including the establishment and initiation of privately operated institutions.

Meanwhile, cities and counties operate schools, health departments, general hospitals, welfare departments and recreational units all of which contribute primary prevention and the conservation of basic human strengths, often in times of personal crisis. Detection, diagnosis, treatment and rehabilitation of persons with psychiatric problems is conducted in psychiatric units of county hospitals and in county-operated outpatient clinics and rehabilitation centers. Through evaluation of local operations and financial support of inservice training, local governments contribute to the pool of available knowledge and of skilled personnel.

Private organizations and individuals, through their direct activities and their funds, promote the development of a healthy citizenry by their participation in education, religion, social welfare, employment, and so forth. Private hospitals and clinics, private nursing homes, private physicians, psychologists, social workers, nurses, rehabilitation workers —all are engaged in treatment and rehabilitation of the mentally ill and retarded. Individuals pay for their own training, private foundations and agencies support and conduct research and training, and professional persons give their time and skill to research and training—often without pay.

Thus, whether conceiving of a statewide program or of a local, regional program, one can envision private and governmental resources (at federal, state, county, and municipal levels) sharing in the development and operation of services, without any one group accepting total responsibility.

To properly evaluate the potential effectiveness of such a division of efforts, let us now look at the mental health needs of the people of California and assess our responsibilities from this perspective.

The population may be divided into four categories, or zones:

Zone I—The Prenatal and Birth Population

This population has a genetic inheritance, fetal development, and reactions to the birth experience itself. Most who are live-born are healthy; a few are already impaired.

Zone II—The Normal Population

They move from birth into normal functions in our society. As infants, children, adolescents, adults and the aged. They influence and are influenced by their diets, climate, families, schools, churches, jobs and various social institutions. They face stresses and cope with them. They have the usual ups and downs, but do not require formal, outside assistance.

Zone III—The Troubled Population

These people have special needs. They turn to "trouble-shooting" or "caretaking" agencies and resources. They seek help from doctors, hospitals, and health departments; from social agencies, welfare departments, and public assistance bureaus; from organizations for crippled children, orphans, and transients; from police, probation departments, and the courts. They are under stress and they have emotional problems secondary to the stresses, but they are not essentially psychiatric problems.

Zone IV—The Mentally Ill Population

These people are mentally or emotionally ill. They may have developed emotional responses to stress which are too serious to respond to the Zone III resources, or they may have brain damage or deficiency. They require psychiatric clinical services.

People from Zone I generally move to Zone II, but may instead move directly to Zone III or IV. Thereafter people may move from zone to zone, back and forth.

Primary prevention is intended to move people from Zone I to Zone II and to keep them there. Efforts to conserve strengths and increase resistances to stress often move people from Zone III to Zone II. Diagnosis, treatment, and rehabilitation are all intended to move people from Zone IV to Zone II or III. Research, training, and improvement of facilities are intended to improve the service to people in all four zones.

Modern psychiatric approaches demand that the patient in Zone IV receive adequate treatment as early as possible, with as little dislocation as possible, with as much continuity as possible and with as much social restoration as possible, so that he may be returned more quickly to Zone II or III. Psychiatric services must, therefore, be located where they can meet these conditions and where they may care for the patient (1) Without loss of his job, but (2) If that is necessary, without his leaving home, but (3) If that is necessary, with his remaining in the community, but (4) If that is necessary, without loss of his community ties and relationships.*

A PROPOSED PROGRAM FOR THE DEPARTMENT

It is clear, then, that the Department of Mental Hygiene does not, cannot and should not undertake to meet all of the mental health needs of the citizens of California. In a comprehensive plan to make maximum use of all resources, the Department of Mental Hygiene should:

1. Further motivate and provide technical and consultative assistance to those who are engaged in the primary prevention of mental disorders, but should not operate such preventive services directly.

2. Further motivate and provide technical and consultative assistance to those who are engaged in the conservation of those human strengths which increase resistance to mental breakdown, but should not operate such conservation services directly.

3. Further motivate and provide technical and consultative assistance to those outside of the Department of Mental Hygiene who diagnose, treat, and rehabilitate the mentally disordered when such services meet the requirements of modern psychiatric treatment as outlined above.

4. Continue to operate hospitals at current bed level, clinics and related services for the diagnosis, treatment, and rehabilitation of the mentally ill and mentally retarded with increased attention to the requirements of modern psychiatric treatment as outlined above. (Increased services can be financed in part by savings from new beds not needed.)

5. Continue to engage in research and training alone and in cooperation with others and assist others in their research and training in the mental health fields.

The Department of Mental Hygiene must encourage federal, county and municipal governments, private individuals and professional groups to develop adequate services in all four of the zones described. Such encouragement should come in the form of professional leadership and motivation, consultation, and technical and financial assistance in the organization and operation of services.

The Department of Mental Hygiene must also continue to operate services in Zone IV, but it must do so cognizant of California's soaring population, psychiatric advances, and the advantages to the patient, the general population, the local community and the State of keeping people from entering Zone IV and of getting them out of Zone IV as quickly as possible. In consideration of these factors the Department must intensify its present operations. In place of more beds, the Department must improve present bed operations and increase its activities outside of the hospitals, in the local communities.

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*McNeel, Burdette H.: Personal communication.

The Department of Mental Hygiene must also considerably increase its training and recruiting in order to develop more personnel for the Department's program and for the programs and services of other state agencies, of other levels of government and of private organizations and activities.

All activities of the Department of Mental Hygiene must become permeated with the research program in order to advance our knowledge in the mental health sciences and increase the efficacy of our operations.

The efficiency of the Department's physical plants must be increased. To do so, present construction plans must be continued and the modernization of all old buildings must be completed.

We hope to avoid the necessity for an enormous increase in hospital beds, but the warning is before us: One other large state, which until recently emphasized only building hospital beds, now has a costly 120,000 beds for a population of close to 17,000,000. Compare this with California's 47,000!

If, by relatively small annual increments of service and by expenditures in the broad mental health field, we are able to keep up with the enormous population increases, we shall avoid building such a massive number of beds. The saving would be upwards of $750,000,000 for building and an additional $100,000,000 a year for new support, or a total of $200,000,000 annually for support alone. Hence the absolute necessity of providing the moderate increases we request from year to year.

The endorsement in principle to these goals and methods is respectfully requested.

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Tracheotomy in Children

A Controlled, Planned Emergency Procedure

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• The value of tracheotomy as a life-saving operation has been increased greatly in recent years by a broadening of the indications for its use. It is made safer for the patient by performing it reasonably early, and, in any event, under planned emergency conditions. The first is made possible by experience and judgment in choosing the time, mainly from close observation of the patient; the second by preceding the operation with tracheal intubation. Meticulous postoperative care is of great importance.

WHEN TO PERFORM TRACHEOTOMY and how to perform it are questions of primary importance in the management of respiratory obstruction in children. Treatment of the various problems which may require tracheotomy will not be discussed in this paper. It is assumed that every reasonable therapeutic means is always used to avoid surgical intervention in a critically sick child. However, it is the danger of the unreasonable efforts to avoid operation, and the methods of performing the delayed operation, with which this paper is most concerned. The ideas presented are certainly not original, but as a method of procedure they have been found useful in the management of cases of respiratory obstruction at Children's Hospital of the East Bay.

Until fairly recently, tracheotomy was used only as a last resort when death was virtually certain without it. Experience gained in the management of bulbar poliomyelitis[5] in the early 1940's has resulted in a gradual broadening of the indications for performing tracheotomy.

The indications, generally accepted today, are well stated by a number of authors.[1,2,6,7,10] In addition to the circumvention of a fixed upper respiratory tract obstruction, tracheotomy may be utilized to by-pass pooled secretions, to reduce the anatomical dead space (which it does by half), to reduce respiratory resistance by eliminating friction at the normal laryngeal valve and to give direct access to the tracheobronchial tree for the management of fluid obstructions of the lower respiratory tract and the maintenance of tracheal toilet.

These factors may at times be useful in managing a variety of conditions including acute injuries[8] (head injuries, jaw fractures, severe burns), acute infections (tetanus, encephalitis, poliomyelitis), cerebrovascular accidents, various causes of pulmonary failure[1] and the administration of anesthesia in certain injuries or cases of arthritic or cicatricial fixation of the neck and jaws.

The determination of the time to intervene surgically in the relief of respiratory obstruction is a matter of considerable judgment, and may in some cases represent the combined opinions of several physicians of different special skills. The broadened concept of the indications for and the value of tracheotomy has brought the realization that it need not be a last-resort emergency operation. It is this point that should be stressed in the management of the more common condition of transitory fixed upper respiratory tract obstruction such as is seen in cases of acute inflammation of the glottic area in children.

The decision regarding whether to operate or give the patient a further test of time can only be made after careful observation. The child should be watched, if possible, through a period of agitation (which usually accompanies the performance of certain nursing duties) and a period of rest. It is important to plan all the necessary, uncomfortable manipulations such as the taking of temperature, drawing blood, getting material from the throat for culture and the giving of injections, and do them at one time rather than disturb the child repeatedly. This will permit earlier and easier evaluation of the patient's respiratory status.

If, after a period of observation, the child is noticeably tiring, and there is no reasonable expectation that the obstruction will spontaneously reverse within a few hours, it is wise to perform a tracheotomy at that time rather than to risk having to do an emergency last-resort operation. In this regard, the facial expression and emotional state (presence of agitation) are more reliable signs of anoxia and fatigue than is the patient's color. If one waits for the occurrence of cyanosis before relieving obstruction, the prolonged anoxia may disturb respiratory physiologic processes to such an extent[10] that the pa-

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tient's recovery is greatly jeopardized. In severe respiratory acidosis the patient may arrive at a point at which the only remaining stimulus to respiration is the effect of the anoxemia on the carotid and aortic chemoreceptors, which have become the peripheral respiratory centers. In this event, attempts to correct anoxemia without removing the obstruction would be expected to cause apnea and death.

If one feels that a test of time is justified, there are certain details that must be considered. The patient should be clearly visible and audible to a trained attendant at all times. Some, otherwise very satisfactory, individual humidification units become so foggy inside and the nebulizer makes so much noise that the patient cannot be seen or heard by the nursing staff, unless the unit is placed very close to the nursing station or personnel is assigned to work in the room or ward continuously.

If the child is excessively upset, particularly on being confined in a tent, the best solution may be to insist that one of the parents stay at the bedside and attempt to soothe him with appropriate caresses. Rarely the parent may be inadequate to the occasion, in which case a frank discussion followed by trial of the other parent if available; or elimination of this feature entirely may be necessary. There is frequently a temptation to use sedation in an effort to prevent the child's increasing his problem by general physical exertion and local traumatic impact on the glottis. If one can be sure that the agitation is owing to temper or unhappiness or fear, and not to anoxia, a modest dose of sedative can be very helpful. The exceptional child who reacts with more excitement, or conversely, who quickly becomes stuporous, may create an additional problem for the physician; and certainly the knowledge that this can occur should make one quite cautious in the use of sedatives.

Finally, it is essential to have a feasible plan in the event the patient becomes suddenly worse, contrary to expectations. The classical order to cover this contingency has always been "tracheotomy tray at bedside." Even with the tray at hand, the prospect of carrying out tracheotomy at the bedside is not pleasant. From the procedure of doing tracheotomy over a bronchoscope, the author, having the assistance of excellent anesthesiologists, became accustomed to do it over a flexible endotracheal tube. From this a logical step was to substitute intubation equipment, first bronchoscopes and later endotracheal tubes, for the bedside tracheotomy tray. The intubation sets that are used contain appropriate sized battery-powered laryngoscopes, an assortment of endotracheal tubes, soft rubber aspiration catheters and a bite block. It is generally accepted that it is easier and safer to perform intubation than tracheotomy, under conditions existing at the patient's bedside.

Thus, with the aid of tracheal intubation instruments, tracheotomy is converted to a planned emergency whether it be in the ward, in the emergency room or in surgery. If done in surgery, the anesthesiologist proceeds as he would for endotracheal anesthesia in any other kind of case. It is advisable to have a rigid bronchoscope ready in the event of unforeseen difficulty. The anesthetic is induced with nitrous oxide-oxygen mixture, the larynx exposed and inspected and the endotracheal tube inserted. From then on the procedure is carried out in an unhurried, orderly manner.

A short transverse incision is used in the skin at a level midway between the cricoid cartilage and the superior border of the sternum. In selecting this level, the patient's head should be moderately extended by placing a towel roll or a sandbag under the shoulders. The deep fascia is exposed and incised in a vertical plane. The dissection is mainly blunt and is carried down to the trachea without skeletonizing it. A vertical incision is made through two exposed rings; the isthmus of the thyroid gland, if exposed, is usually displaced upward. It has been found that with the foregoing procedure, the tracheostomy will usually be made through the third and fourth rings.[11] A tracheotomy tube of appropriate size and curve is inserted after the endotracheal tube has been withdrawn, under vision, to the upper limits of the tracheal incision. The tube should be secured with tapes, tied with a square knot. A single silk suture is usually placed near each end of the incision after the tube is in place.

The advantages in doing tracheotomy over a tube have been recognized for many years. Certainly, comfort to the surgeon is an important consideration. The conversion of an emergency to a planned procedure is of advantage to the patient beyond the instantaneous relief of his respiratory distress. It virtually eliminates the hazard of pneumothorax, whether it be spontaneous from gross respiratory effort, or secondary to surgically opening the pretracheal space in the presence of respiratory obstruction, or from injury to the dome of the pleura while dissecting in the neck under difficult conditions. Also eliminated is the danger of massive hemorrhage from anomalous large vessels.[9]

Bigler and Holinger[3] advised doing tracheotomy over a tube in all cases with the exception of those with deformity of the cricoid cartilage or complete laryngeal atresia, in which it is impossible to intubate the patient. In these fortunately rare cases, tracheotomy must be performed immediately if the newborn infant is to survive. Davidson[4] cited the case of an 8-year-old with pronounced tracheal

TABLE 1.—*Reasons for Tracheotomy in 13½-Year Period Through December 1959 at Children's Hospital of the East Bay*

	No. of Cases
Laryngotracheobronchitis	48
Epiglottitis	13
Associated with other surgical procedures	20
Thoracic operation	7
Tumors face and neck	4
Endoscopy	4
Postsurgery aspiration	1
Neurosurgical procedure	1
Plastic operation	1
Acute injury	2
Congenital anomaly	7
Tetanus	2
Subglottic stenosis	2
Meningitis	1
Bulbar poliomyelitis	1

crusting and glottic swelling, in which he felt that placing a flexible endotracheal tube before tracheotomy would have been less satisfactory than introducing a bronchoscope, since preliminary removal of the crusts was necessary before the obstruction was relieved.

With rare exceptions, then, the endotracheal tube will be found to be as useful as the rigid bronchoscope for the emergency relief of obstruction before tracheotomy. Once in place it is safer because of its flexibility, and the patient can be moved as required, without the problem of keeping him in proper position in relationship to a rigid tube. Furthermore, an adequate endotracheal tube intubation set is simpler and less expensive to supply than a limited bronchoscopic set. Sets can be kept at hand at several locations in a hospital, and may be carried in a physician's bag.

Meticulous postoperative care is an essential feature in avoiding development of a keloid of the wound, granulations in the trachea and eventual stenosis of the trachea at the site of tracheostomy. Baker,[2] who wrote in detail about this phase of tracheotomy, advised daily changes of the tube after the first 48 to 72 hours. It is wise to have an intubation set at the bedside during the first change of tube; also an extra tube one size smaller than the tube to be replaced.

Tracheotomy was done 94 times in a period of thirteen and a half years at Children's Hospital of the East Bay for the reasons shown in Table 1. In 65 per cent of cases the operation was for the relief of obstruction secondary to acute respiratory infection. Of this group, one patient was operated upon twice, at 30 months, and again at four years of age, for obstruction due to acute laryngotracheobronchitis.

Pneumothorax was the only complication directly related to the operation. It occurred in four cases and in each instance was apparently caused by the tracheotomy tube slipping out of the trachea. There was one death in this group. In the other three cases simple aspiration of air from the pleural cavity was all that was necessary.

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Electron Microscopic Studies of Renal Disease

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• The nephrotic syndrome, glomerulonephritis, disseminated lupus erythematosus and the Fanconi syndrome show characteristic changes with electron microscopy.

Experimental studies of animals were carried out to determine the significance of such changes by observing reactions that occur under carefully controlled conditions. A lesion with collagen deposition that was found in the centrolobular region of glomeruli sheds new light on the function of this region. This evidence must be considered in developing an understanding of how the production of urine is controlled. Fluid-filled compartments and various bodies associated with the ultrastructure of tubule cells can be produced under conditions which suggest that these structures play a role in tubular resorption.

RENAL disease in humans and in experimental animals is being studied with electron microscopy in our laboratories as part of a systematic investigation of morphologic alterations of the kidney under physiologic and pathologic conditions. Some features of normal nephrons in animal and human kidneys will be presented, followed by a description of changes found in some human renal diseases, and finally some results of experimental work that throw light on the mechanisms of pathologic and physiologic changes.

NORMAL KIDNEY STRUCTURE

Normal glomeruli have been studied by a number of investigators in both animal* and human† kidneys. There is general agreement that the capillary wall at the periphery of glomerular loops is, at a minimum, composed of epithelium, basement membrane and endothelium. The epithelial cells have a number of primary processes giving rise to branching and interdigitating "foot processes," which cover the basement membrane (Figure 1). The basement membrane consists of a moderately dense and relatively homogeneous layer between epithelium and endothelium. On either side of this, less dense layers are frequently seen. Some investigators consider these to be parts of the basement membrane,[16] others do not include them,[13,27,43] and they have been regarded as an artifact.[7] Considerable variation exists in the reported thicknesses of basement membranes

Figure 1.—*Normal human glomerulus.* The specimen was taken by needle from a boy of 12 years who did not have clinically demonstrable renal disease, present or past. The basement membrane (BM-BC) and epithelium of the parietal layer of Bowman's capsule (Ep-BC) is at the upper left. Across Bowman's space (BS) is a group of epithelial cells (Ep) forming the visceral layer of Bowman's capsule. These epithelial cells have processes which branch and interdigitate to form foot processes (FP) which cover the basement membranes of the glomerular capillaries (C). A red blood cell (RBC) is seen in the capillary at the lower left. Endothelial cells (End) line the capillaries with a thin layer of cytoplasm which in some places is perforated (arrows). Some swelling, which may be artifactual, is present in the endothelial cytoplasm of the capillary above and to the right of the center. Intercapillary cells (I) lie in the centrolobular regions. The basement membranes in these regions are thicker and more nodular than the membranes which run more peripherally around the capillaries. We are not able to determine from the human material available whether the membranes as they appear in this picture are within the range of normal or represent the remnant of a previous unrecognized disease process (×4,600).

Figure 2.—*Nephrosis, active.* This specimen is from a 7-year-old boy who had had nephrosis for eight months before biopsy. The distinct foot processes have disappeared over most of the basement membranes. No definite thickening is found in the peripheral capillary basement membranes in this case. Basement membrane-like material (BMM) seems increased in the centrolobular areas. Focal swellings (Sw) project from endothelial cells, but a few of these may be found in normal kidneys.[6] Microvilli (Mv) develop from epithelial cells. Part of a leukocyte (L) lies near the center (×5,200).

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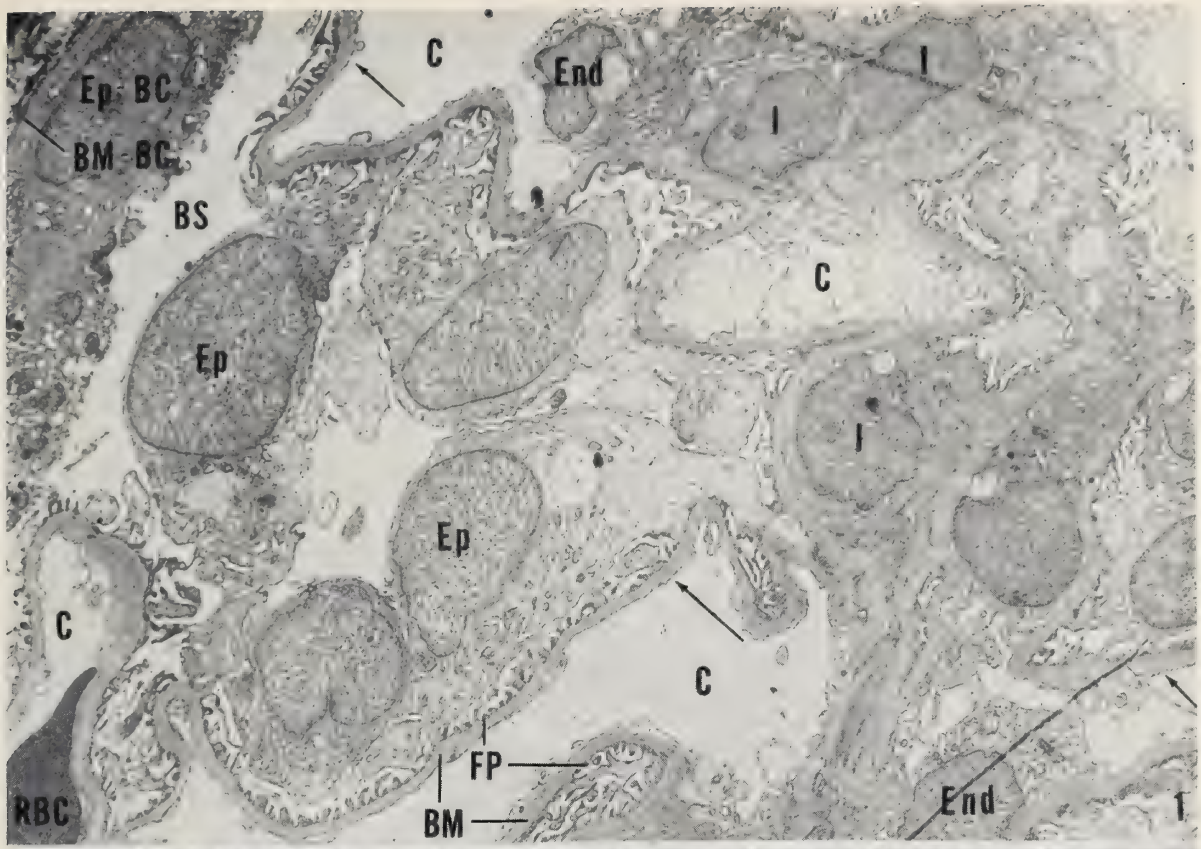
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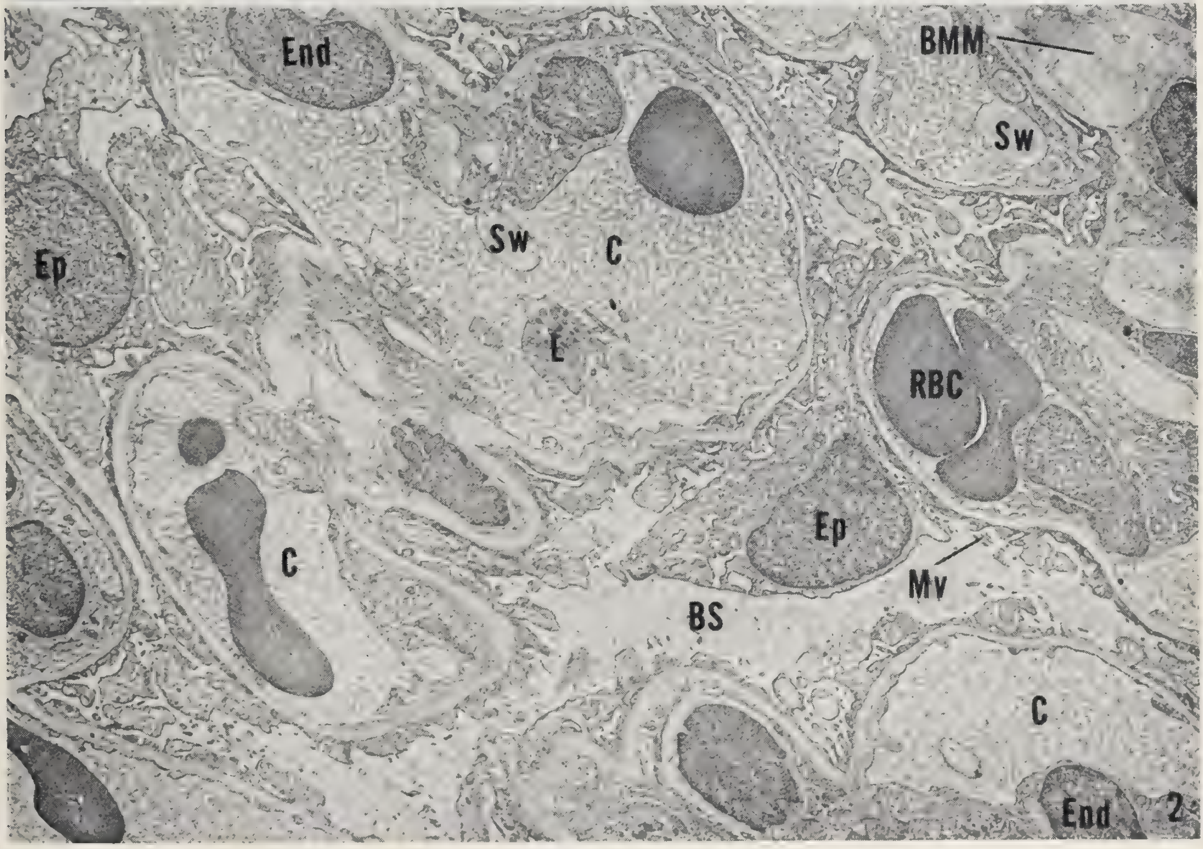
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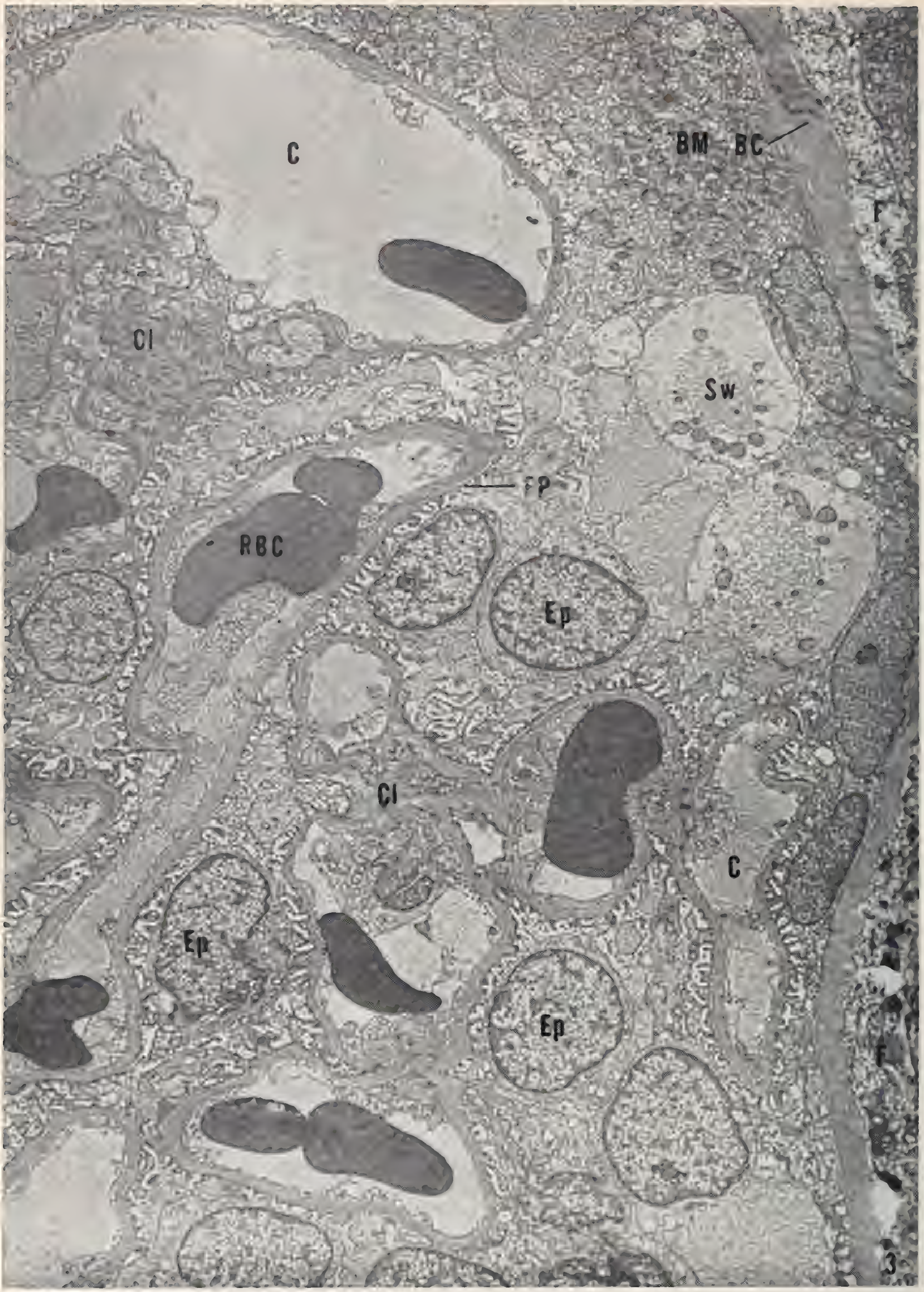
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in normal human glomeruli: 2,600 Å[11] to 3,795 Å[7] in adults, 1,450 Å in a child,[46] and about 1,000 Å in five infants and children.[43] The basement membrane may become thicker with age.[13] Values of 1,250 Å have been reported for mice,[34] about the same for rabbits and dogs,[7] and for rats, 1,700 Å[7] or 800 to 1,200 Å.[47] The need for further study is apparent. Few biopsies of normal human kidneys have been performed.

Most of the capillary wall is lined by a thin layer of endothelial cytoplasm containing relatively large discontinuities usually called holes or pores. The holes are much too large (600 to over 1,000 Å)[27] to be considered a filtration barrier for proteins, which approximate 100 Å in diameter. The holes seem to be less frequent in human material.[7]

Whether cells in the centrolobular region of glomeruli are simply endothelial cells[6,13,16] or intercapillary cells of a different type, possibly mesangial,‡ is still unsolved. Studies to determine the location of the osmotic barrier for proteins in glomeruli have suggested either epithelial cells[12,17] or basement membranes.[8,43] It has been suggested that proteins under abnormal circumstances might pass either through "slit-pores" between foot processes[17] or by vacuolar transport across epithelial cells.[12] Defects in basement membranes have been correlated with proteinuria associated with a variety of diseases.[43]

The structures of different segments of renal tubules have been studied in experimental animals.[10,26,33,40] The best results have been obtained with tubules found in the outer part of the cortex, proximal and distal convoluted tubules and collecting tubules, which have been fixed by dripping fixative on kidneys of living animals.[26] This has not yet been done with human kidneys. Good preservation of tubules lying in the deeper portions of the cortex and in the medulla is more difficult. Although the main features of the cells found in the subcapsular position have been well described, little has been said of variations under physiologic conditions. Cytoplasmic bodies other than generally recognized forms of mitochondria, endoplasmic reticulum or granular cytomembranes, and the agranular Golgi systems, need considerably more study. Only the barest beginning has been made in elucidating the mechanisms by which tubule cells perform their functions of resorption and secretion. This will be discussed in a later section.

HUMAN RENAL DISEASE

Several types of human renal disease have been studied by means of biopsy material obtained at laparotomy or with a special needle.

In "pure" nephrosis (also called acute membranous glomerulonephritis) the most consistently demonstrable change is said to be loss of foot processes of epithelial cells, with the basement membrane becoming covered by broad layers of epithelial cytoplasm[13,14] (Figure 2). Other changes noted less constantly are increased numbers of vacuoles in epithelial cells, basement membranes somewhat thicker than normal and sometimes with a "motheaten" appearance, and swelling and vacuolization of endothelial cells.[13] The change in foot processes seems to be reversible, as normal structure was reported on biopsy of material taken in a case of nephrosis during remission.[46] The correlation of changes in foot processes with severity of the clinical disease was noted in our studies, but we are less certain about reversibility of thickening and nodularity of basement membranes, especially in centrolobular areas. In cases of nephrosis in remission that we studied, basement membranes (or basement membrane-like material) in the centrolobular areas (Figure 3) seemed to be considerably thicker and more nodular than we would expect from the appearance of glomeruli of experimental animals and from study of the small amount of normal human material available in our laboratory plus that reported in the literature. We also see focal interstitial fibrosis around glomeruli or between tubules of patients in remission, upon examination electron microscopically as well as sometimes with light microscopy. In cases of nephrosis in which there is a "mixed" clinical picture, with elements of nephritis, proliferation of endothelium and thickening of basement membranes are more extensive, but distortion of epithelial foot processes is less pronounced.[13] When hyalinized glomeruli occur, they are composed of masses of material resembling basement membrane and a few cells.[13]

Figure 3.—*Nephrosis, remission.* The specimen is from a boy four and a half years of age who had had nephrosis for two years, followed by a steroid-induced remission several months before the biopsy. Foot processes are present over most of the glomerular basement membrane, in contrast to their loss during active nephrosis (Figure 2). It is difficult to be sure of any thickening of the basement membranes here. The centrolobular regions (Cl) seem to have an increase in basement membrane-like material. The swelling of the epithelial cell processes in the upper right is probably due to squeezing by the biopsy needle. The basement membrane of the parietal layer of Bowman's capsule (BM-BC) is considerably thicker here than normal (compare with Figure 1) and shows clearly a layered structure. Around the capsule is a layer of periglomerular fibrosis (F) (×4,700).

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‡References 4, 5, 25, 31, 39, 41, 45, 48.

KEY TO ABBREVIATIONS

BB—Brush border
BC—Bowman's capsule
BM—Basement membrane
BM-BC—Basement membrane of parietal layer of Bowman's capsule
BMM—Basement membrane-like material
BS—Bowman's space
C—Capillary
CB—Cytoplasmic bodies
CF—Collagen fibers
Cl—Centrolobular
Cl L—Centrolobular lesion
D—Distal tubule
End—Endothelial
Ep—Epithelium
Ep-BC—Epithelium, Bowman's capsule
Ep V—Epithelial vesiculation
F—Fibrosis
Fib—Fibrinoid
FP—Foot processes
I—Intercapillary cells
IB—Irregular bodies
IM—Infolded membranes
L—Leukocyte
Lu—Lumen
Mv—Microvilli
N—Nucleus
RBC—Red blood cell
RG—Round granules
Sw—Swelling
SC—Subbasilar compartments
TI—Tubular invagination
V—Vacuole

Figure 4.—*Subacute glomerulonephritis.* The specimen is from a 4-year-old boy who had had tonsillitis seven months before biopsy, followed by hematuria and edema. Endothelial vesiculation or swelling is prominent in the capillaries. Considerable basement membrane-like material has deposited in the centrolobular region around intercapillary cells. Epithelial cells have lost foot processes (arrows) and have developed microvilli (×4,900).

Patients with acute and subacute glomerulonephritis show mainly swelling and proliferation of endothelial cells and accumulation of basement membrane-like material[13,43,46] (Figure 4). Some epithelial swelling is seen, but foot processes are usually intact.[13] Fibrinoid deposits may occur between basement membrane and endothelial cells. We would like to emphasize the occurrence of the most severe changes or deposits in the centrolobular region (Figure 4).

In disseminated lupus erythematosus, the main changes are generalized thickening of basement membranes and variable proliferation of endothelial cells[13] (Figures 5 and 6). Subendothelial fibrinoid deposits may occur and become quite large.[11]

In diabetic glomerulosclerosis the basement membranes become quite thick, and hyaline deposits, as in the material of basement membranes, appear in glomeruli and enlarge to form the characteristic nodular lesions.[8,11] Farquhar, Hopper and Moon[11] expressed belief that the deposits occur *between* "endothelial" cells, while Bergstrand and Bucht[8] believe the deposits are *in* "endothelial" cells. Further work on the centrolobular region may demonstrate more conclusively the existence of intercapillary cells and relate the nodular deposits to them. In some patients with more advanced lesions, obliteration of capillary lumens, fibrinoid deposits and loss of foot processes can be found.[11]

In amyloidosis there is localized irregular thickening of the basement membranes with thickened regions bulging out under the epithelium and also showing a lighter density than normal.[11]

In preeclampsia and eclampsia, pronounced swelling of endothelial cells and fibrinoid deposits are found.[11]

In the Fanconi syndrome (Debre-de Toni-Fanconi) the clinical defects of aminoaciduria, glucosuria and hyperphosphaturia are accompanied at an early age by considerable alterations in cells of renal tubules (Figure 7) and also by some glomerular changes. Considerable interstitial fibrosis occurs. Cystine crystals can be obtained from tissues but their exact location in relation to cells has not been previously determined. In electronmicrographs in the present study, crystals were found in interstitial regions between tubules, some apparently in the cytoplasm of interstitial cells. Some of these crystals were identified as cystine by the hexagonal shape and an electron diffraction pattern similar to that of L-cystine.

EXPERIMENTAL RENAL STUDIES

Of particular interest in the study of human diseases is comparison with similar diseases produced in animals.

Aminonucleoside nephrosis resembles human nephrosis both clinically and morphologically.[47] After seven daily injections of this drug in rats, glomerular epithelial cells showed obliteration of foot processes and an increase in number and size of cytoplasmic vacuoles. Later an increase in number of endothelial cells and in basement membrane-like material was noted. Ferritin has been injected in animals with aminonucleoside nephrosis to study the passage of a protein molecule out of glomerular capillaries during proteinuria.[12]

Nephrotoxic serum nephritis and experimental serum sickness nephritis show some similarities to human acute glomerulonephritis. Not enough information is available yet to say which more closely resembles the human disease. Nephrotoxic serum nephritis has been produced in rats and rabbits.*

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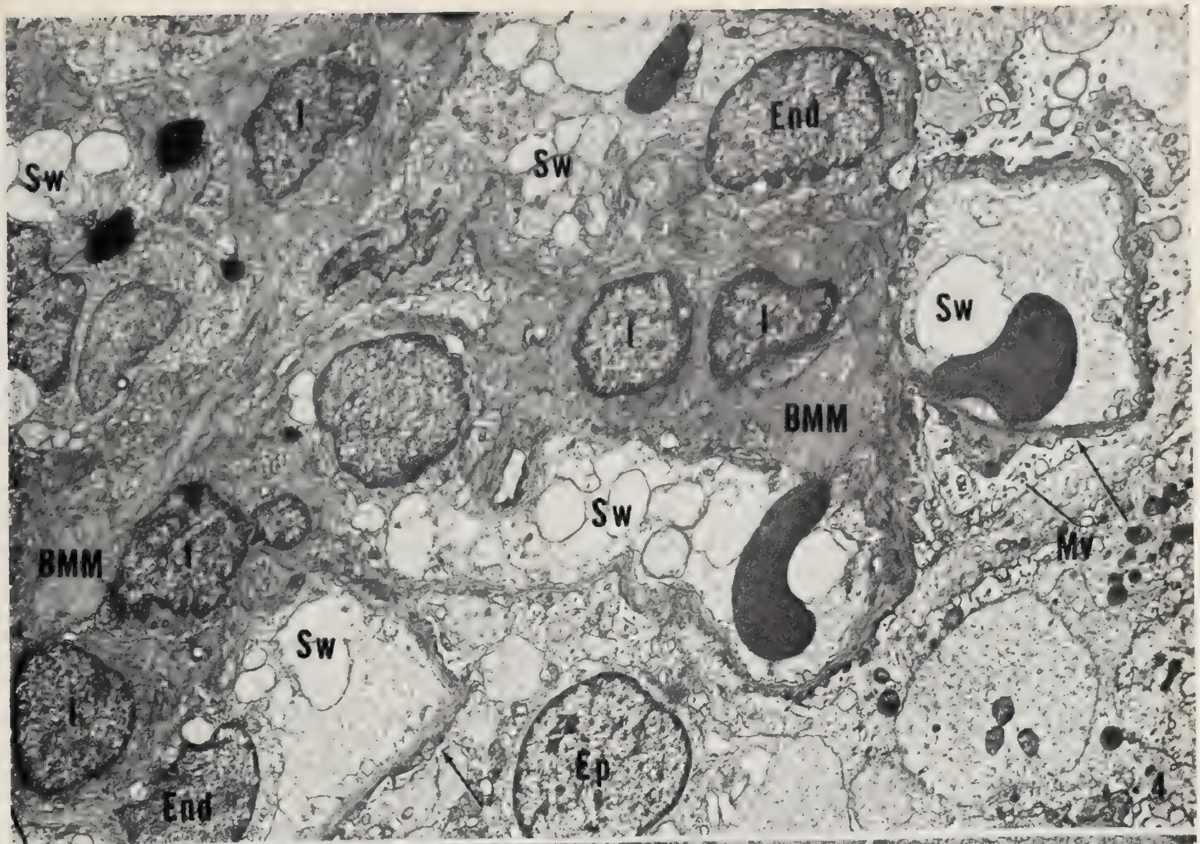
*References 22, 29, 30, 32, 41.

Figure 5.—*Disseminated lupus erythematosus.* Specimen from a 16-year-old girl who had had symptoms for three years at the time of biopsy. A greatly altered glomerular capillary shows tremendous thickening of the basement membranes. The capillary lumen has disappeared and endothelial swelling is prominent. A small subendothelial deposit (Fib) is seen. Epithelial foot processes have disappeared (arrows). Such tissue cuts with difficulty, as is shown by the knife marks across the section (×6,500).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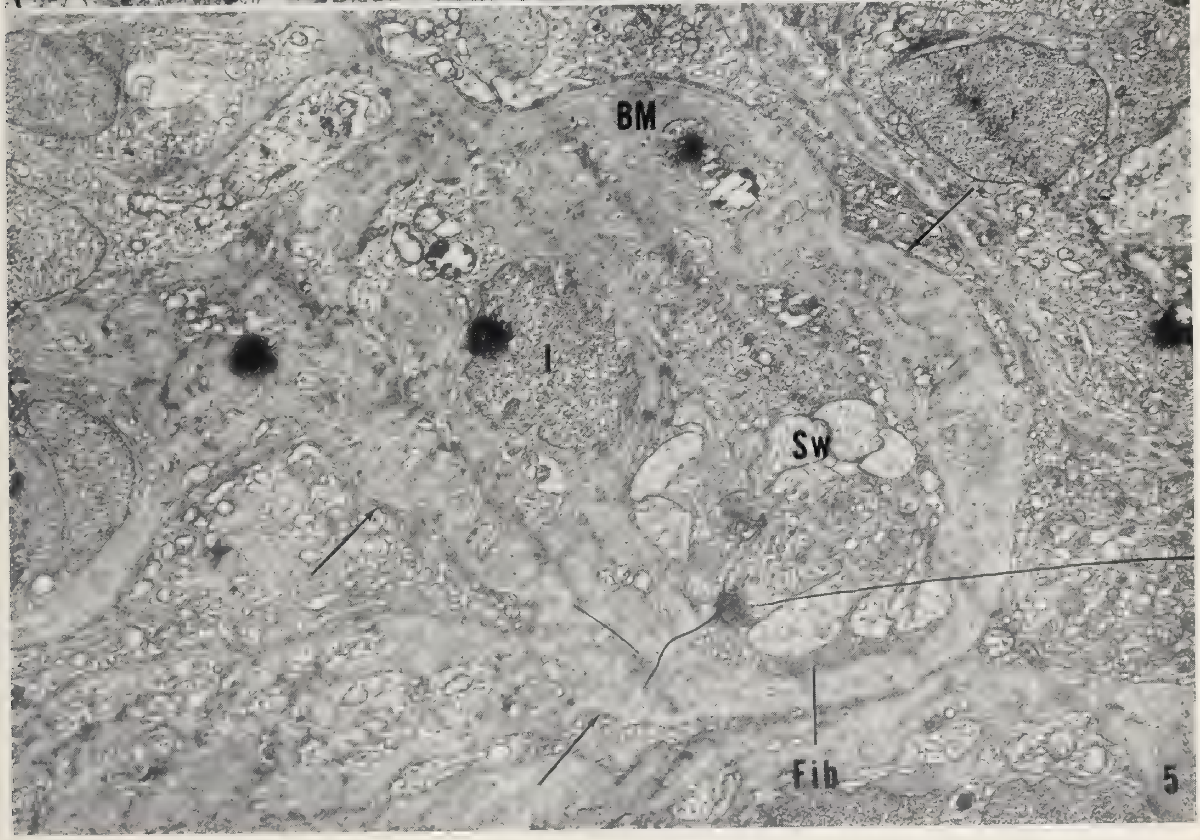
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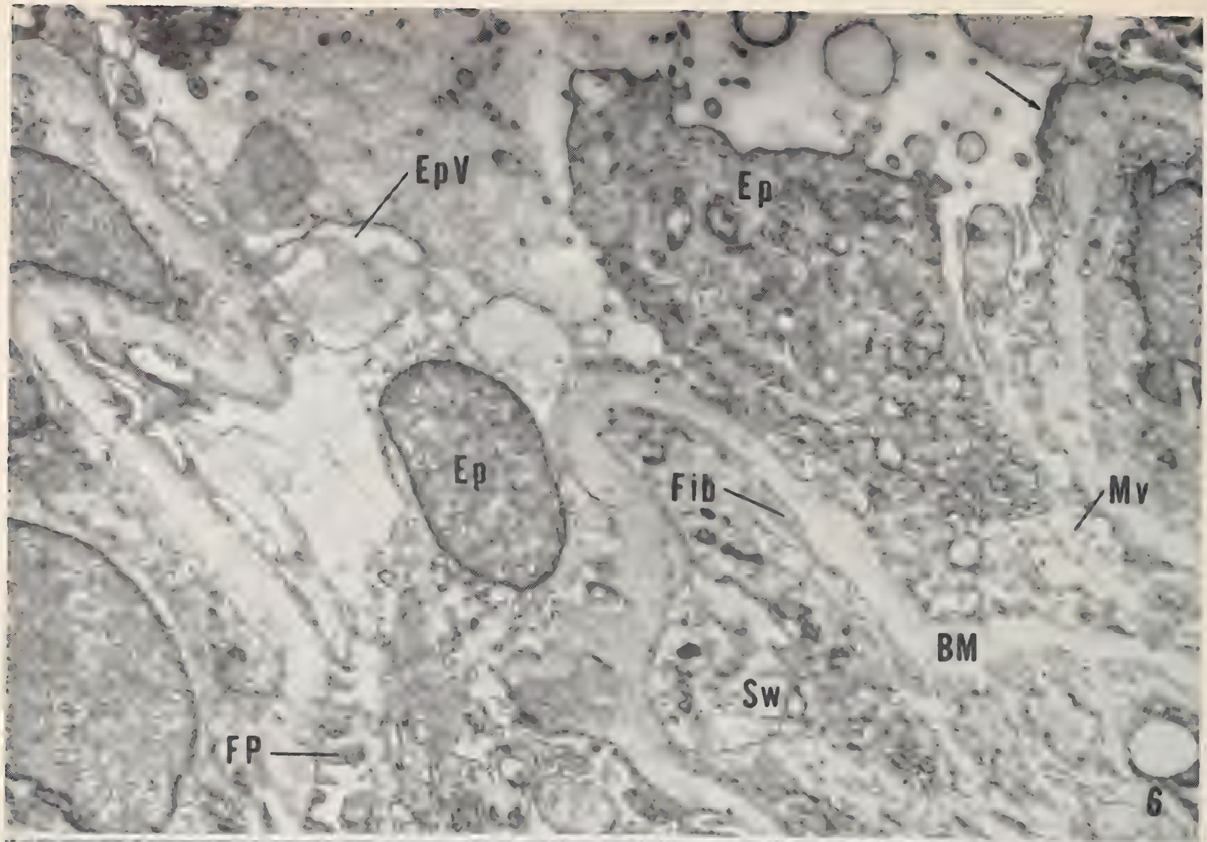
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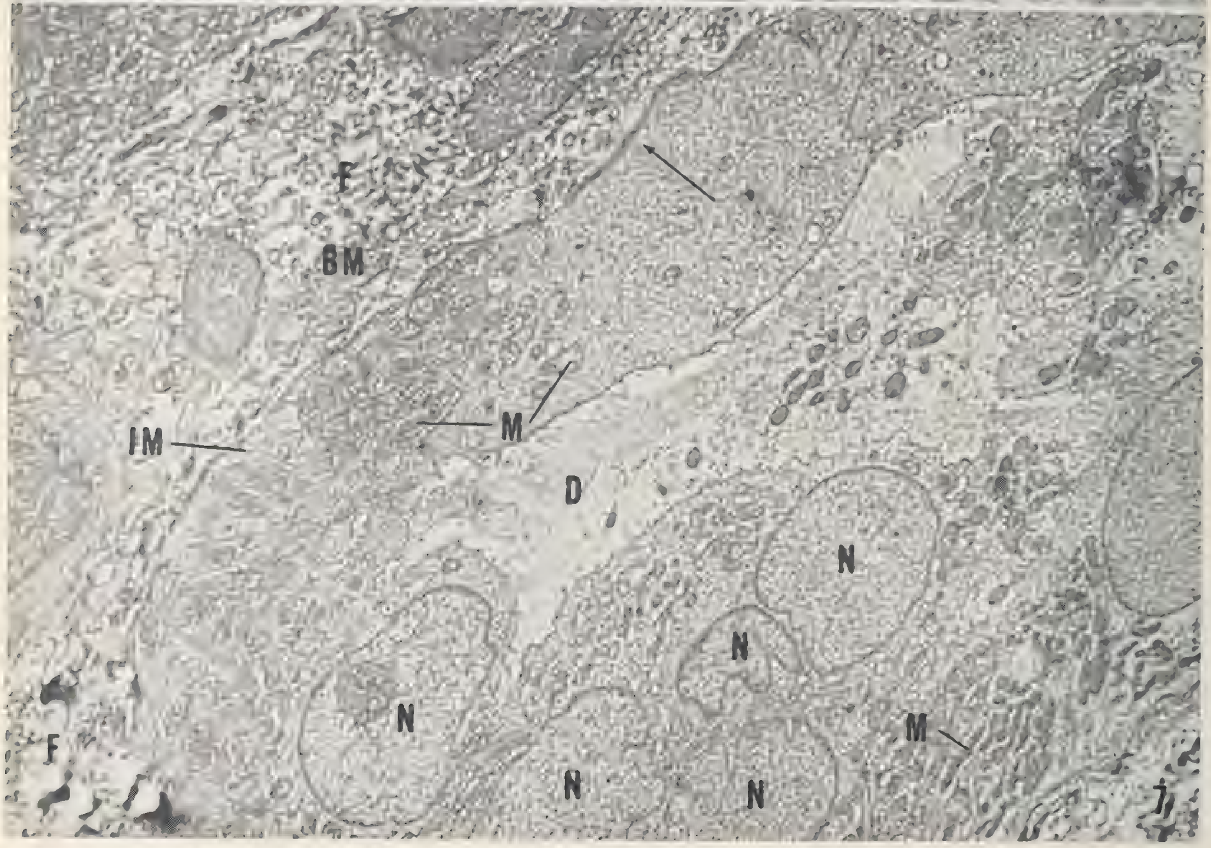
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Figure 6.—*Disseminated lupus erythematosus.* In this specimen from a 7-year-old boy the basement membranes in the glomerulus are not nearly as thick as in Figure 5. Endothelial swelling is prominent, and subendothelial fibrinoid deposits are seen. Epithelial vacuolization (Ep V) and swelling are apparent, as is formation of microvilli. Foot processes are intact in some places and broadened or lost in others (arrow). The epithelial cells have prominent membrane systems (×7,800).

Swelling,[22,32,41] vacuolation,[22] and proliferation[29] of endothelial cells are found. Swelling and proliferation of mesangial cells are also described by one group of investigators who believe in the existence of such cells in the centrolobular area.[41] Thickening of basement membranes[22,29,41] and changes in density[41] are also found. Subendothelial deposits resembling fibrinoid may be seen.[32] Epithelial cells are not as strikingly altered, but swelling,[22,29,41] vacuolization,[32] formation of microvilli[41] and slight broadening of foot processes[41] are mentioned.

In serum sickness nephritis in rabbits the glomerular capillaries are obliterated by endothelial swelling and proliferation.[15] There is loss of epithelial foot processes and focal thickening of the basement membrane. Neither in human nephritis nor in experimental nephritis produced by nephrotoxic serum or foreign antigens have large blebs formed by the outer nuclear membrane yet been found. We found such perinuclear blebs to be one of the main features of the reaction of cells in tissue culture to specific antiserum.[18,19]

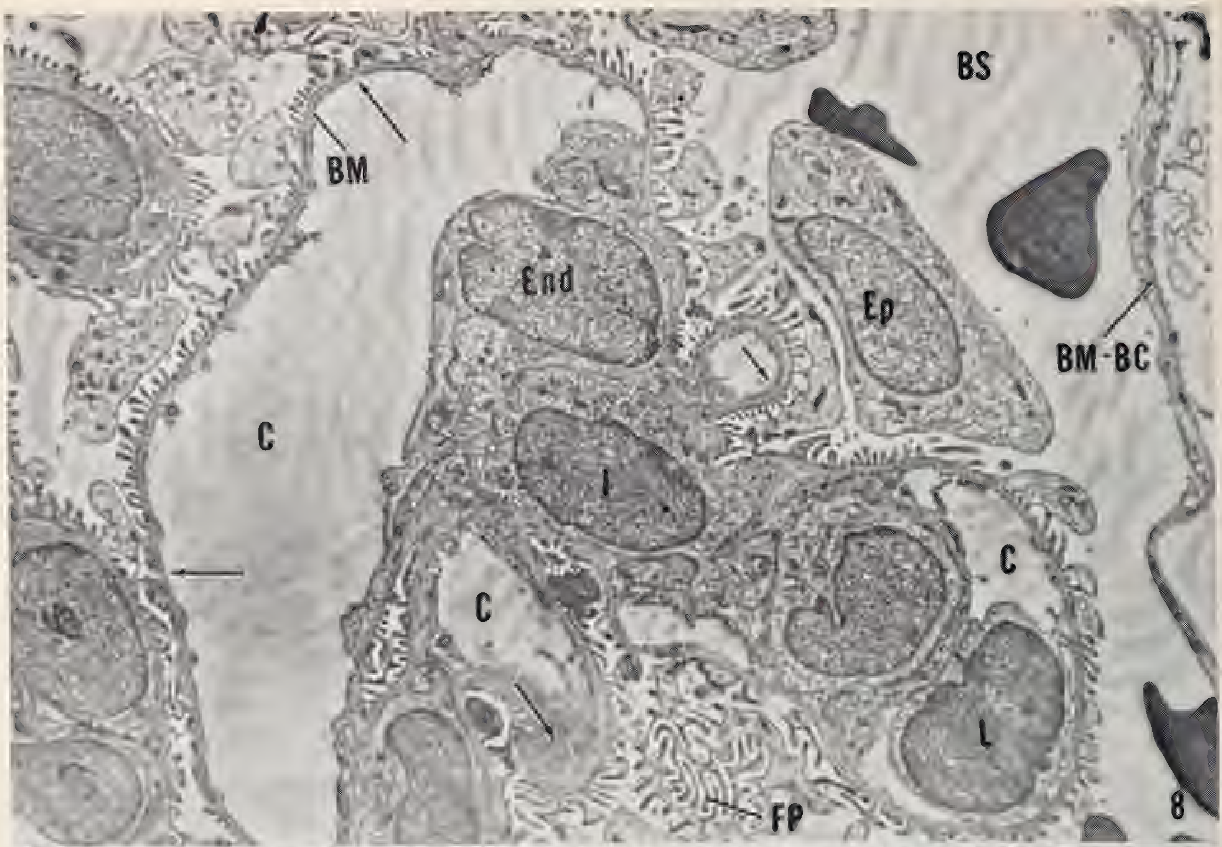
Experimental renal disease has been approached in our laboratories by correlating functional and structural changes and thereby reaching an understanding of the physiologic and pathologic significance of cellular fine structures and their alterations. In starting these studies, uranyl nitrate was selected as a simple chemical affecting the kidney with known functional changes and known morphologic alterations under light microscopy. In acute uranium poisoning, animals develop proteinuria and polyuria followed by oliguria.[3] We found several changes in glomeruli, some of them previously noted. Most striking was a hitherto undescribed lesion, which appeared with a trichrome stain as a blue deposit in the centrolobular area of most glomeruli after four days.[3] It had some resemblances to human chronic lobular glomerulonephritis. Electron microscope studies showed that this deposit was intimately associated with cell processes in an intercapillary position and contained several components, including collagen fibers (Figures 8, 9 and 10). Because collagen fibers are not found in the normal glomerulus, this indicated that they were newly formed. Their association with cells in the intercapillary region suggested that these cells were different from the endothelial cells lining glomerular capillaries. This amounts to functional evidence in support of the concept that there are distinct intercapillary or "mesangial" cells. Further studies are being conducted to test whether the centrolobular region may be concerned with control of capillary blood flow and filtration.

Other changes in glomeruli include the development in intercapillary cells of dense-walled vacuoles or lipid bodies, and in epithelial cells of vacuolization, hyaline droplets and myelin figures, and partial loss of foot processes.

Tubular Resorption of Large Molecules

The renal tubules as well as glomeruli are profoundly affected in acute uranium poisoning. Necrosis of proximal convoluted tubules has long been recognized, but we have been more concerned recently with changes in non-necrotic cells which seemed to have functional significance.[2,3,44] The development of droplets or bodies in the cytoplasm of proximal convoluted tubule cells (Figures 11 and 12) occurred at the same time as proteinuria developed. The droplets in cells stained like material in the lumen of tubules and, with electron microscopy, it had a similar character. Evidence from light microscopy[10,21,23,42] has indicated that proteins which pass through glomeruli can be taken up by proximal tubule cells. A possible mechanism for the formation of such cytoplasmic bodies from substances of large molecular weight would be enlargement of tubular invaginations at the base of the brush border and pinching off to form vesicles or small bodies, which could later concentrate their contents and coalesce to form the large bodies. An increase of

Figure 7.—*Fanconi syndrome.* The specimen is from a two-year-old boy who was one of three siblings with symptoms of the Debre-de Toni-Fanconi syndrome. The picture shows a distorted distal convoluted tubule (D) with several epithelial nuclei piled up together in the lower part. The mitochondria (M) in the epithelium on the left side of the tubule are swollen and fragmented as compared with the more normal smaller, denser, elongated mitochondria at the lower right. The infolded membranes (IM) of the basilar cell processes are apparent at the lower left and right of the tubule, but they are absent from the cell in the upper center (arrow). Considerable interstitial fibrosis (F) is present. In spite of this, the basement membrane of the tubule is thin (×5,300).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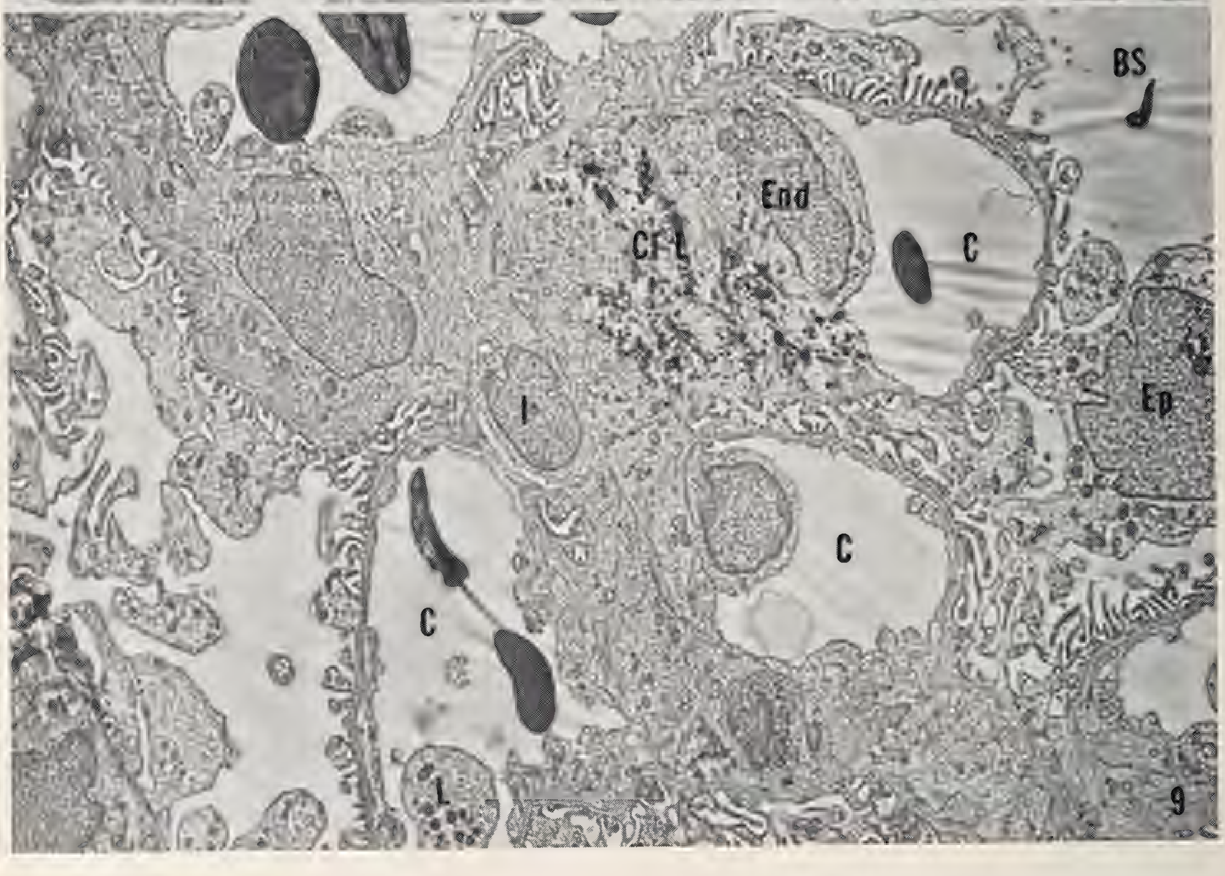
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Figure 8.—*Normal rat glomerulus.* The structures are similar in general to those seen in the human glomerulus (Figure 1). The main difference is that the rat has thinner basement membranes. Several capillary lumens surround a centrolobular area containing an interstitial cell. Endothelial pores or holes are seen in both cross and tangential sections (arrows). A leukocyte lies in the capillary at the lower right. The presence of red blood cells in Bowman's space is doubtless due to an artifact. The basement membrane of Bowman's capsule is at the right (×5,800).

small vesicles and bodies seems to precede the appearance of the large bodies, but the evidence is too tenuous at present to be sure just how large molecules move from the lumen to the bodies. Of more physiologic interest is the consideration that if the kidney takes large molecules into the cytoplasm by a vacuolar mechanism, the same system could operate for the tubular resorption of water and salts.

Tubular Resorption of Water

Evidence for tubular resorption of protein by a vacuolar transport mechanism is also evidence for a similar tubular resorption of water and salts as stated above. Although an increased number of vacuoles can be found in some cells (Figure 13) when polyuria is beginning, the evidence is not adequate that this is an important mechanism for water transport. Another mechanism is suggested by the ease with which tubular cells swell, especially in the apical portions. With uranium poisoning, such swelling may occur at the onset of polyuria (Figure 14). As kidney tubule cells ordinarily have an osmotic pres-

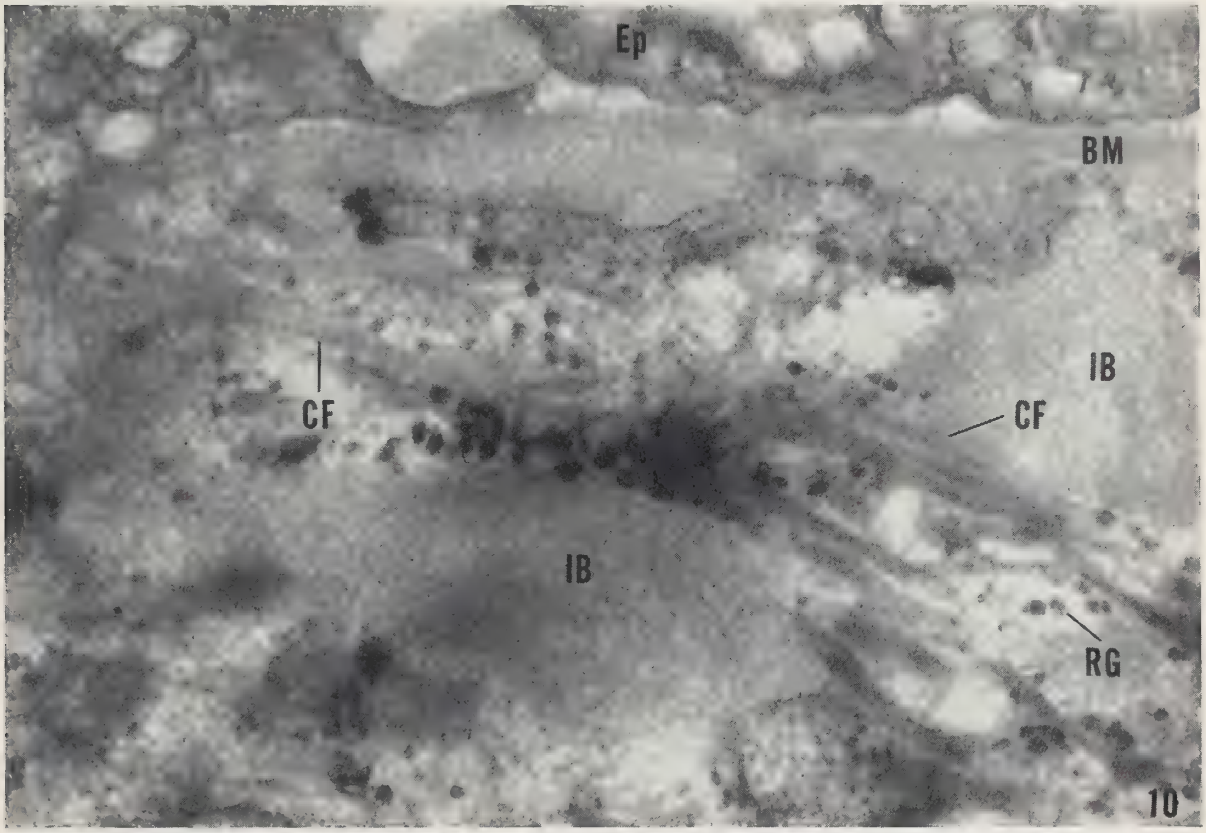

Figure 10.—*Collagen fibers in centrolobular lesion.* Higher magnification of a lesion similar to that in Figure 9. Several collagen fibers (CF) run across the picture. Three intraperiod striations are seen in these unstained fibers. The small dense round granules (RG) are about 300 A in diameter. The larger irregular bodies (IB) are denser than basement membranes when examined in thicker sections, as in Figure 9. The epithelial cell at the top has lost foot processes. The collagen fibers in these lesions occupy an unusual position on the capillary side of the basement membrane (×44,000).

Figure 9.—*Centrolobular lesion, uranium poisoning.* Specimen from a rat that was killed six days after subcutaneous injection of uranyl nitrate. A centrolobular lesion is closely associated with intercapillary cell processes and lies beneath an endothelial cell. (Compare with Figure 8.) It contains collagen fibers, small dense round granules, and larger irregular bodies, all of which are better seen in Figure 10 (×5,300).

sure higher than isotonic,[24] they could resorb fluid simply by diffusion across the plasma membrane. It would not be surprising if the evolutionary process had supplied two or more mechanisms for so important a function.

Movement of water out of cells is another problem. The bases of the proximal, distal and collecting tubule cells consist of a number of processes which interdigitate with each other or with processes from adjoining cells.[33] Normally the infolded membranes (β-cytomembranes) are in general contact, with only small separations here and there (Figures 11 and 15). However, the membranes form a potential space extending from the basement membrane around the cell processes and between adjacent cells to the terminal bars at the level of the base of the brush border. It has been shown that these cell membranes are osmotically active,[26] and that other epithelia concerned with fluid transport have a similar anatomic arrangement.[28] At the onset of polyuria following uranium injection, this potential space in a number of proximal, distal and collecting tubules (Figure 16) becomes distended with fluid, forming large subbasilar compartments. These studies seem to give functional evidence that the space is involved in fluid transport. Moreover, they indicate that all three tubular segments are involved, as has been suggested on other grounds by renal physiologists.[9] The appearance of such spaces might be interpreted as evidence of a defective pumping mechanism in the cells,[38] usually moving fluid back to the capillaries.

If subbasilar compartments represent phenomena associated with resorption of fluid from glomerular filtrate, they should be observed in the presence of polyuria produced by means other than a toxic metal. Accordingly, the posterior lobe of the pituitary was removed in one group of rats.[20] They were offered isotonic glucose to drink to aid their recovery from the operation. Their urine volume increased greatly, 20 to 30 times normal, and their kidneys also developed large subbasilar compartments. This presented more evidence for the association of compartments with polyuria. However, the increase in urine volume could not be definitely ascribed to posterior hypophysectomy because rats with a sham operation had a similar increase in urine volume. Another group of rats, not operated on, was offered isotonic glucose. They showed a similar increase in urine volume and the appearance of large subbasilar compartments (Figure 17).

The compartments have been found, in this laboratory, to be increased by the injection of uranyl nitrate or by ingestion of glucose. They have also been observed, in other laboratories, occurring with "osmotic nephrosis" produced by dialysis with glucose solutions[37] and with phenol red and diodrast excretion.[36] Further experiments are being performed to determine whether the large compartments are a manifestation of the toxic action of the agent used or whether they may be more fundamentally related to disturbed tubular resorption and increased urine flow.

Figure 11.—*Normal proximal convoluted tubule.* An open tubular lumen (Lu) and open capillaries are characteristic of well-fixed normal renal tissue. Beneath the brush border (BB) are tubular invaginations (TI) and apical vacuoles (V). A few small cytoplasmic bodies (CB) are seen, usually in the upper half of the cell. The mitochondria are dense. The nucleus (N) is usually placed toward the base of the cell (×7,100).

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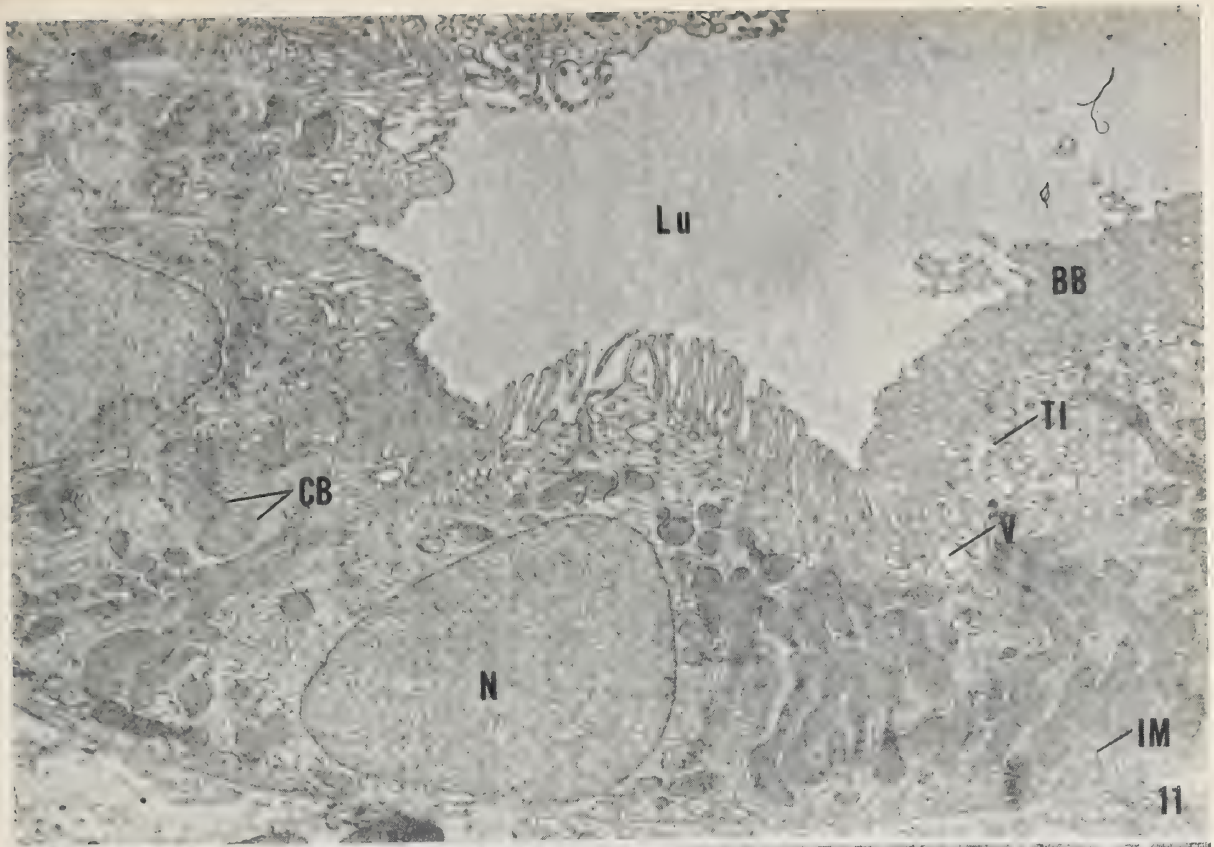
Figure 12.—*Cytoplasmic bodies, uranium poisoning.* Cytoplasmic bodies are increased in size and number in this proximal convoluted tubule, four days after injection of uranium. Proteinuria is pronounced at this time. Compare with Figure 11 (×4,500).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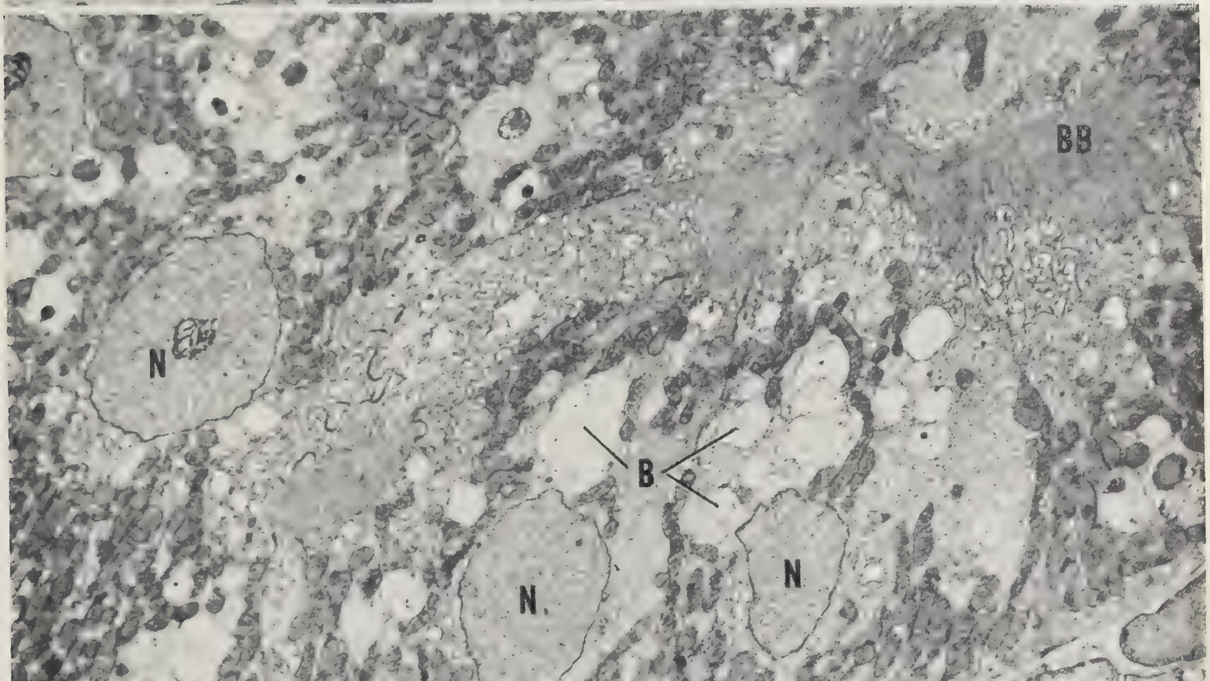
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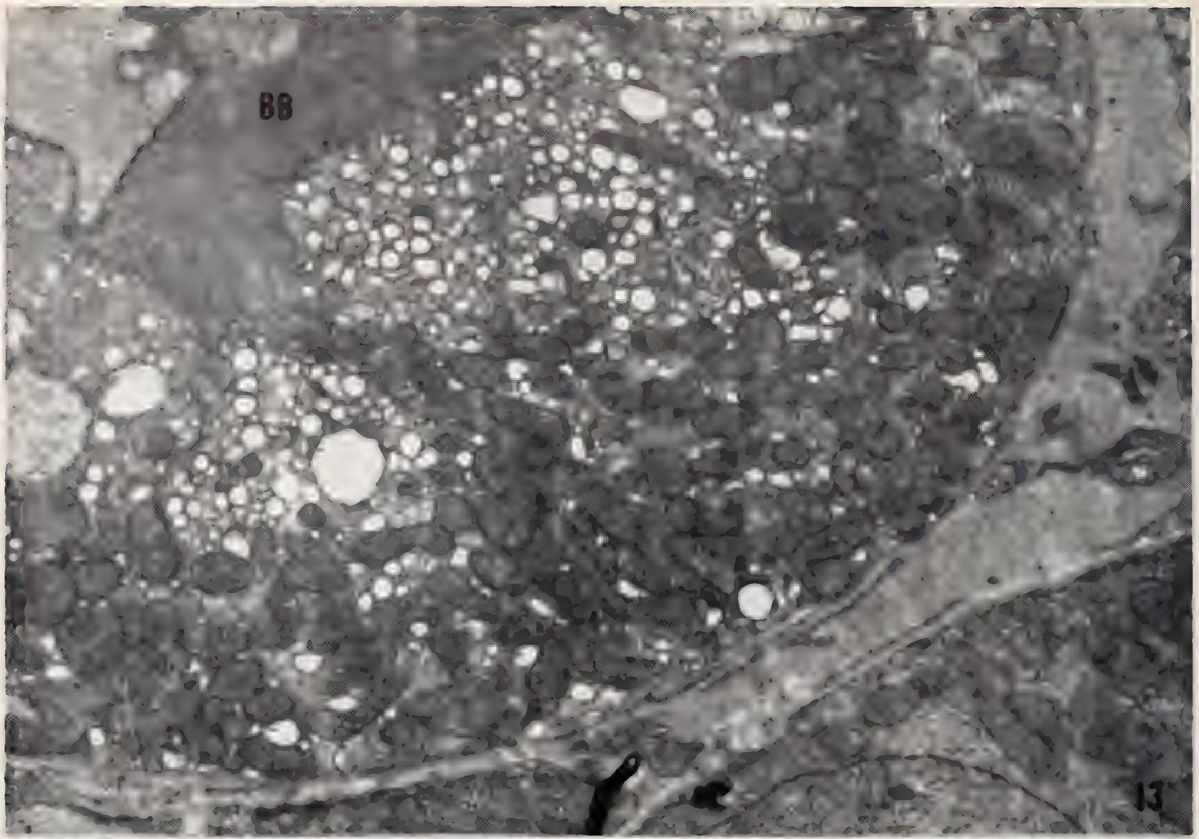
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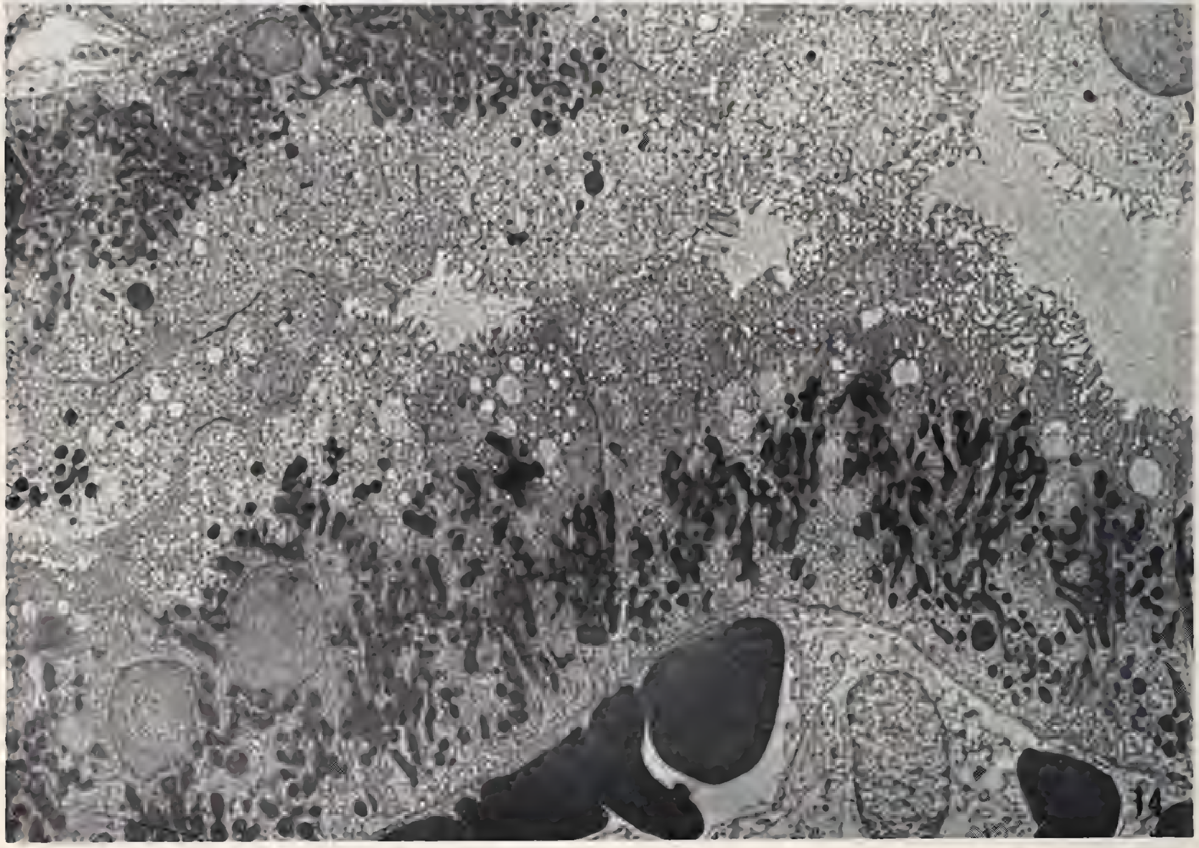
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Figure 13.—*Vacuolization, uranium poisoning.* Vacuolization is prominent in some cells of the proximal convoluted tubules especially in the apical portion, 36 hours after injection of uranium. Polyuria begins about this time. Compare with Figure 11 (×11,000).

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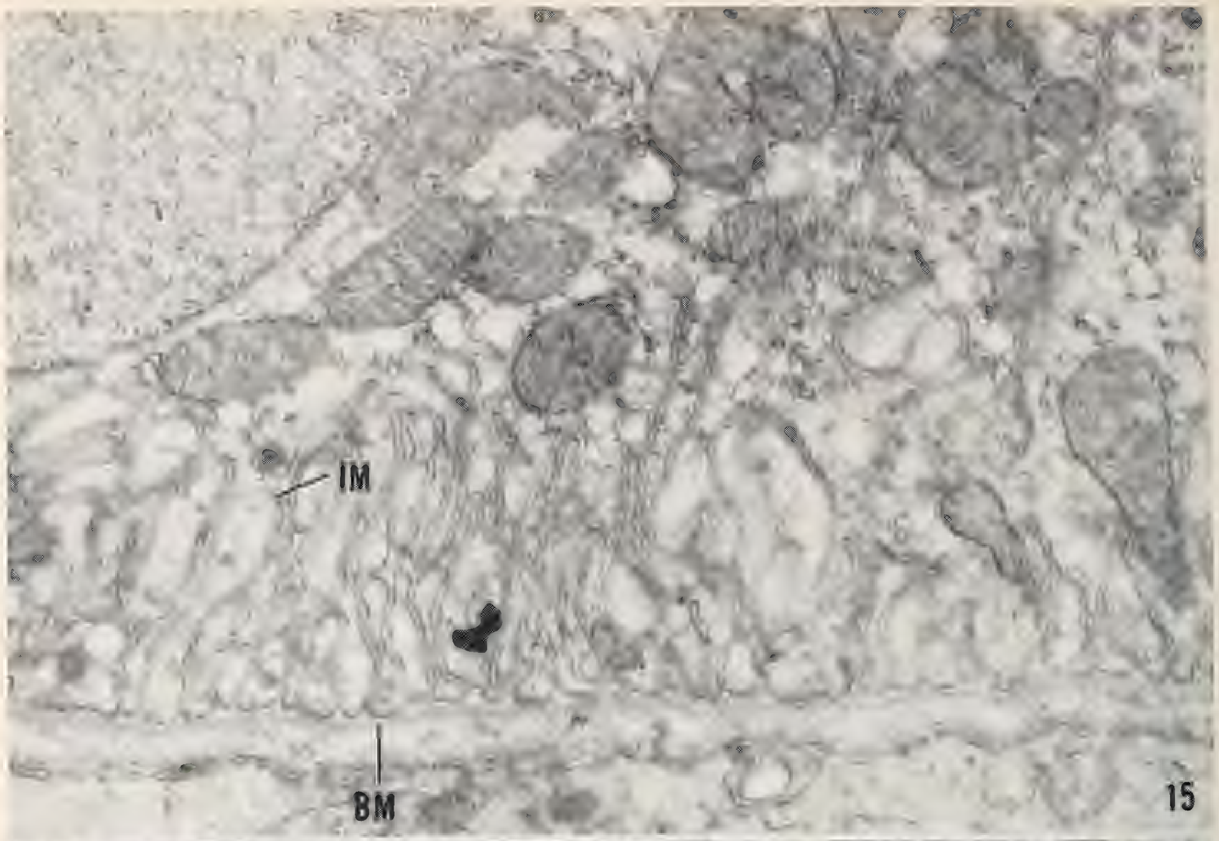
Figure 14.—*Apical swelling, uranium poisoning.* Specimen from a rat killed two days after injection of uranium. Swelling of cells of the proximal convoluted tubule is apparent, when compared with Figure 11. The microvilli of the brush border are separated in many places. Apical vacuoles also seem more prominent here. Polyuria has started at this time (×3,000).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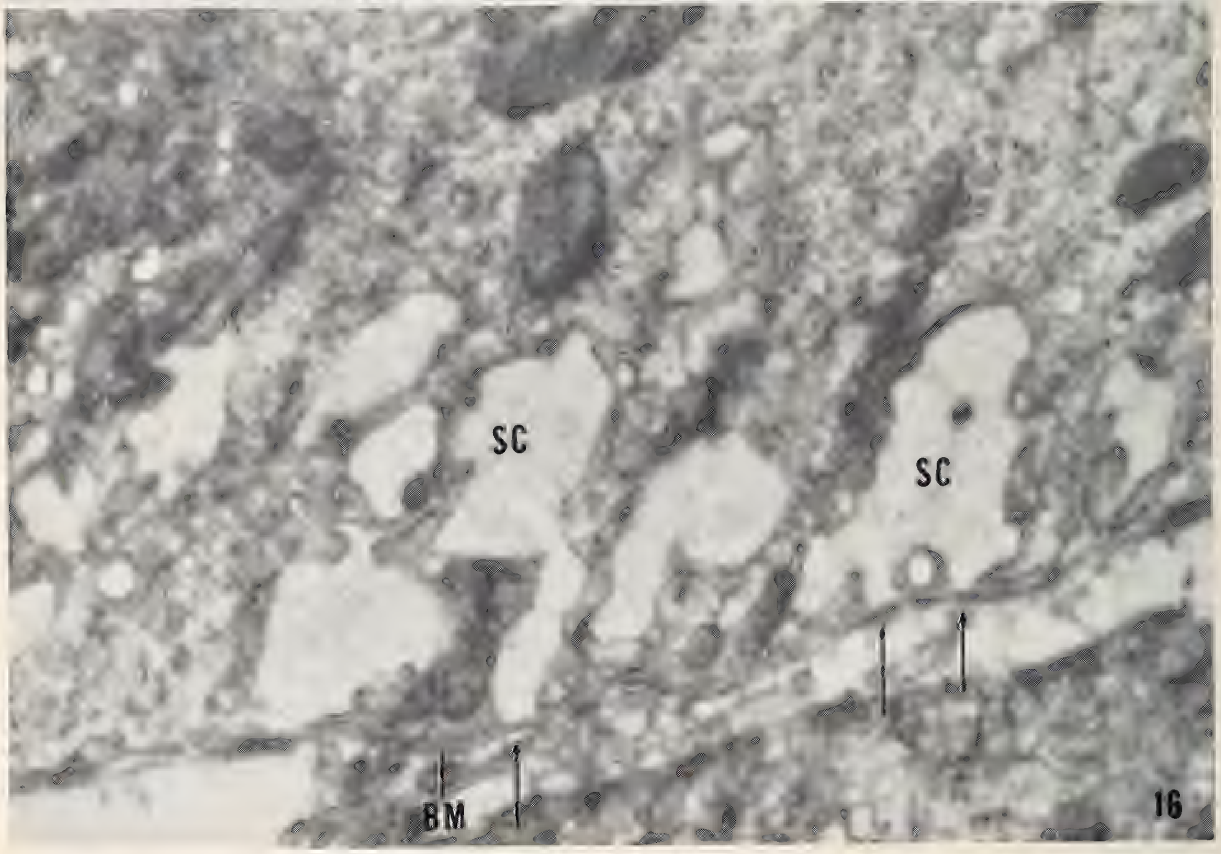
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Figure 15.—*Normal collecting tubule.* The infolded membranes at the base of the cell are in contact. The mitochondria are fewer and arranged more at random than in the proximal and distal convoluted tubules. Small dense ribonucleoprotein particles are scattered through the cytoplasm. Most of the intracellular membranes here are in the form of agranular vesicles (×28,000).

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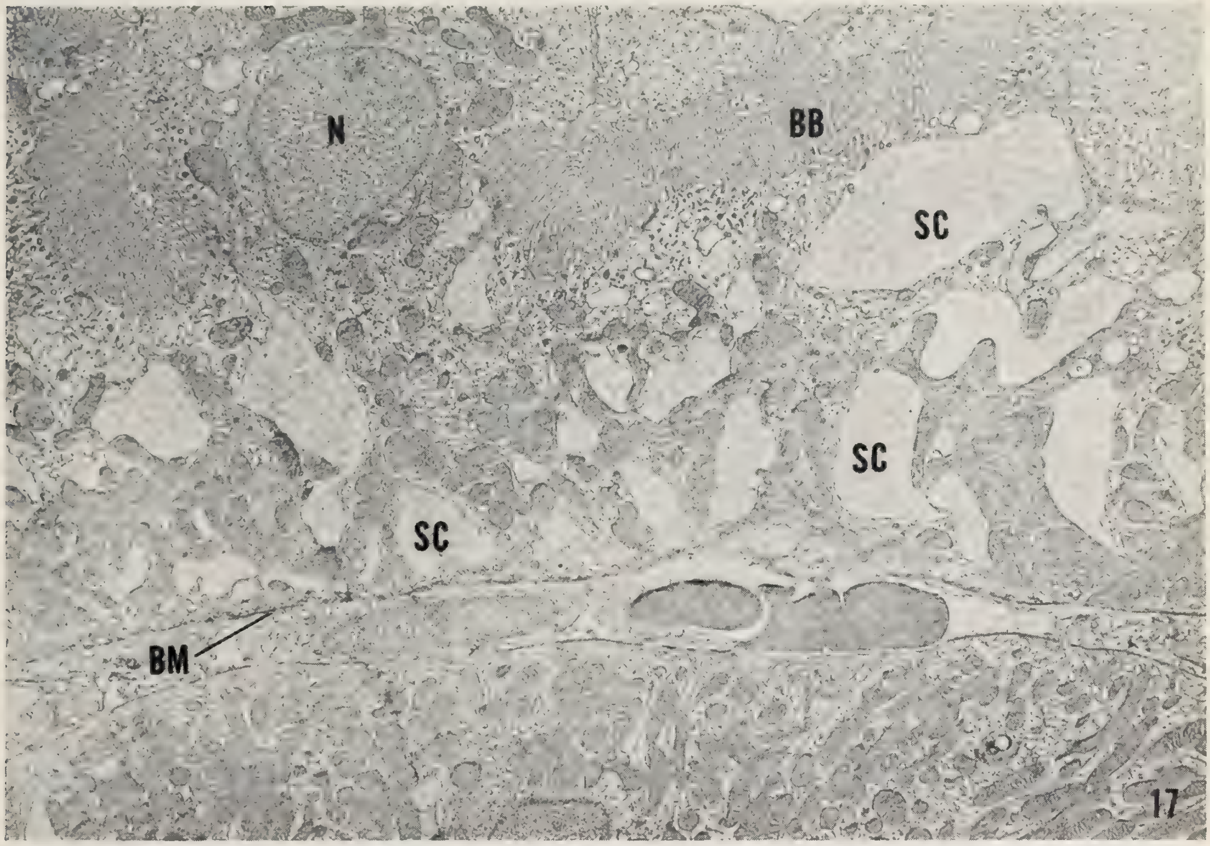

Figure 17.—*Subbasilar compartments, isotonic glucose.* Specimen from a rat that was killed after seven days of polyuria due to drinking water containing 5 per cent glucose. The large subbasilar or extracellular compartments in this proximal convoluted tubule cell extend from the basement membrane to the brush border, stopping at the terminal bars. The cell in the adjacent proximal tubule at the bottom of the picture is not involved, showing how sharply demarcated this reactive change may be. Compare with Figure 11 (×5,800).

Figure 16.—*Subbasilar compartments, uranium poisoning.* The infolded membranes of this collecting tubule are spread apart, forming compartments. Two of these subbasilar compartments (SC) are cut in a plane demonstrating their opening toward the basement membrane (arrows) and, therefore, their continuity with extracellular space at the base of the cell. These compartments become prominent in proximal, distal, and collecting tubules just before the onset of polyuria. The rat was killed 24 hours after the injection of uranium. Compare with Figure 15 (×24,000).

The Potentiation of Radiation Effects With 5-Fluoro-uracil

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BYRON HALL, *M.D.*, and MERALL ROTH, *M.D.*, San Francisco

• A preliminary study of the response of various inoperable malignant diseases to simultaneously administered 5-fluoro-uracil and orthovolt x-ray was performed. The 5-fluoro-uracil was given intravenously at a relatively nontoxic dosage level. The x-ray tumor dose was limited to 2,000 roentgens in every patient.

Pronounced and rapid tumor regression occurred in 12 of 18 evaluable patients. Significant objective response was obtained in each of eight patients with epidermoid carcinoma of the lung.

Toxicity occurred in half of the patients, manifested by pharyngitis, esophagitis, proctitis, leukopenia and thrombocytopenia.

THE ANTI-CANCER EFFECTS of the substituted purine and pyrimidine compounds have been thoroughly evaluated by many investigators. Synthesized several years ago,[3] 5-fluoro-uracil, a halogenated pyrimidine, has had extensive trial in a variety of malignant tumors.[1,2,4] Curreri and coworkers[2] obtained objective improvement in patients with carcinoma of the breast, ovary, cervix, colon and rectum, and hepatoma treated with toxic doses of 5-fluoro-uracil given intravenously. They observed no beneficial effect in patients with carcinoma of the lung, stomach, pancreas, malignant melanoma or hypernephroma. Toxic effects of the compound were nausea, vomiting, stomatitis, diarrhea and bone-marrow depression and, when severe, included gastrointestinal ulceration and hemorrhage, ileus, shock, bilateral pneumonia, agranulocytosis and death.

In late 1958, one of the authors (B.H.), who was treating a patient with squamous cell carcinoma with 5-fluoro-uracil and local x-ray simultaneously, observed a degree of tumor response that suggested unusual radiosensitivity for malignant lesions of this type. In an attempt to evaluate the suspicion of possible synergism of these two modes of therapy, we initiated a preliminary study employing these agents concomitantly in patients with inoperable malignant disease. Trying to avoid severe toxicity, we used a smaller total dose of 5-fluoro-uracil than other investigators had reported.

THE SCHEDULE OF TREATMENT (Chart 1)

5-Fluoro-uracil was administered by slow intravenous drip (3 to 4 hours in 200 to 500 cc. of normal saline solution on the following schedule:

Days 1 through 4: 15 mg. per kg. of body weight (in no case more than 1,000 mg. a day).

Day 5 and twice weekly thereafter: 7.5 mg. per kg. (in no case more than 500 mg. a day).

The irradiation was administered at 250 kilovolts (half value layer 3 mm. of copper) in daily tumor doses of 100 to 200 roentgens, five days a week, to a total tumor dose of 2,000 r. The usual course of combined therapy required two weeks, the patient receiving approximately 90 mg. of 5-fluoro-uracil per kilogram of body weight.

The radiation dosage of 2,000 r. was chosen for several reasons. Several experienced radiotherapists stated that the majority of tumors of the type we planned to treat would not respond significantly to this dose level; this dose of radiation could be given over several areas in the same patient without undue side effects; and, finally, an increase in tumor sensitivity of a lesser degree would be of no practical value.

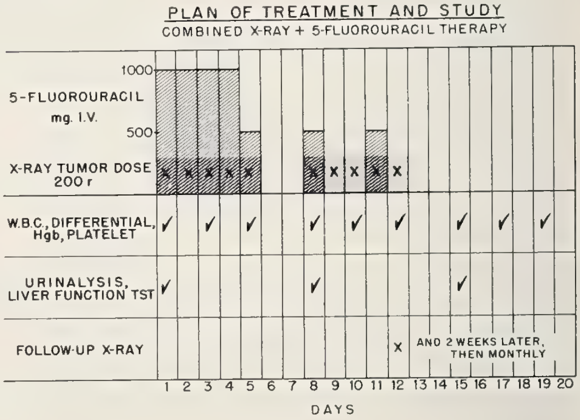

Chart 1

From the Departments of Medicine and Radiology, Veterans Administration Hospital, San Francisco.

5-Fluoro-uracil was generously supplied by Hoffman-LaRoche, Inc., Nutley, New Jersey.

Submitted April 26, 1960.

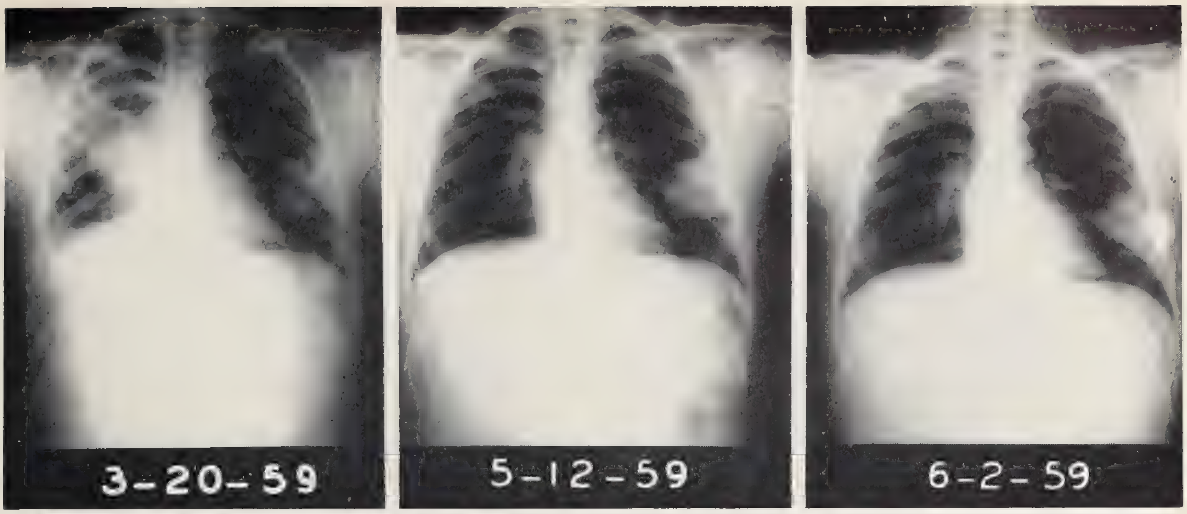

Figure 1.—Embryonal cell carcinoma, with metastastic lesions in both lung fields. *Left*, before treatment. *Center*, two weeks after treatment with 5-fluoro-uracil. X-ray (2,000 r.) was administered concurrently to the lesion in the right lung. The mass in the left lung was exposed to 5-fluoro-uracil alone. *Right*, two weeks after treatment of left lung mass with x-ray (2,000 r.) alone.

Patients were selected by the following criteria:

1. The disease must be biopsy-proven, inoperable, and measurable objectively.
2. The tumor must be of a type known to respond poorly to standard radiation therapy.
3. The patient must be willing to accept experimental therapy and be likely to survive the four to six weeks required for treatment and evaluation.

The total number included in the study was 25. The population at the hospital where this study was conducted is such that epidermoid carcinomas of the lung and larynx constitute the majority of tumors meeting the above criteria. In these two types of malignant lesions, 5-fluoro-uracil alone has proven ineffective.

The following studies were performed on every patient: Leukocyte count and determination of cell differential, hemoglobin content and platelet count three times a week; reticulocyte count, urinalysis, and determination of serum albumin, globulin, uric acid and alkaline phosphatase once weekly. The patients were examined daily for evidence of toxicity. The response of the malignant lesion to combined therapy was measured at the end of treatment and every two weeks thereafter.

TOXICITY

Toxic effects observed in this study were mild esophagitis in four patients, moderately severe pharyngitis in three and severe proctitis in one patient. In each such case the area of inflammation was within the field of radiation.

Leukopenia (less than 3,000 per cu. mm.) occurred in four patients, the number rapidly returning to normal range upon completion of therapy. Thrombocytopenia (less than 100,000 per cu. mm.) occurred in four patients, the lowest count being 55,000 per cu. mm. The thrombocytopenia was not manifest clinically.

In 13 patients, no toxic effects were noted. Not observed in this study were nausea and vomiting, gastrointestinal hemorrhage, shock, pneumonia or death. In no case did anemia or hepatic or renal toxicity occur. Two patients, each of whom received

TABLE 1.—*Results of Combined 5-Fluoro-uracil and Roentgen Therapy of Malignant Disease*

Diagnosis	Total Treated	Response Good	Moderate	None	Not Evaluable
Carcinoma of lung	8	8	....	....	....
Carcinoma of larynx	3	1	1	1	....
Adenocarcinoma of rectum	2	1	....	1	....
Adenocarcinoma of stomach	1	1	....	....	....
Carcinoma of esophagus	2	....	....	1	1
Embryonal cell cancer of testis	1	1	....	....	....
Transitional cancer of bladder	1	....	...	....	1
Lymphoepithelioma	1	....	....	.. .	1
Carcinoma of pancreas	1	....	....	....	1
Carcinoma of tonsil	1	....	1	. .	....
Clear cell cancer of kidney	1	....	....	...	1
Malignant melanoma	1	....	....	....	1
Carcinoma of scalp	1	....	1	....	....
Adenocarcinoma of lung	1	....	....	....	1
Total	25	12	3	3	7

two complete courses of combined therapy in a period of two months, experienced no toxicity of any kind.

RESULTS

Of eight patients with epidermoid carcinoma of the lung (a kind of tumor that had shown no response to 5-fluoro-uracil alone in other reported studies) all showed rapid and significant regression of the lesions receiving x-ray therapy during 5-fluoro-uracil administration. Several were in good health without evidence of tumor six months after therapy. Similar responses were observed in single cases of epidermoid carcinoma of the larynx, adenocarcinoma of the rectum, mucinous adenocarcinoma of the stomach and embryonal cell carcinoma of the testis.

One patient each with epidermoid carcinoma of the larynx, epidermoid carcinoma of the esophagus and adenocarcinoma of the rectum showed no objective improvement.

The remaining ten patients had either a moderately favorable response (slight tumor regression with symptomatic improvement) or could not be evaluated with respect to tumor response.

The patient with embryonal cell carcinoma of the testis had two large metastatic lesions in the lungs, one of which was treated with 5-fluoro-uracil plus x-ray, the other with x-ray alone. X-ray films of the chest showed no response of the lesions to 5-fluoro-uracil alone, slight regression when treated with 2,000 r. alone, and complete disappearance with the simultaneous use of both forms of therapy. (See Figure 1.)

CONCLUSION

The concurrent administration of 5-fluoro-uracil and local radiation produced a greater degree and higher incidence of tumor regression than has been reported with either mode of therapy given alone. The effects observed in this study also exceeded those expected on the basis of adding together the separate responses obtainable by either mode of therapy. Thus, true antitumor synergism appears to exist in this form of combined therapy. More extensive study of this method of cancer therapy is indicated.

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ADDENDUM: In a separate study, conducted by one of the authors (B.H.) an additional 75 patients with malignant disease have been treated with varying doses of 5-fluoro-uracil and x-irradiation. The results in this study have been similar to those reported here.

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When to Operate?

"One should operate only when there are several chances of success; to operate without a chance, means to prostitute the exalted art and science of surgery, and make it dubious in the minds of the laity and colleagues. But where is the measure according to which the chance of success can be gauged? It lies in the untiring study of our science, in the acute criticism of our own observation as well as the observation of others, in the minutest examination of each case and in the critical evaluation of our experiences."—*Theodor Billroth (1829-94).*

From Briefe von Theodor Billroth, ed. by Fischer, 1895

Ischiectomy for Pressure Sores

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• Ischiectomy with primary closure was carried out in five paraplegic patients with pressure sores. This operation, less extensive than the wide excision with full thickness graft that is now widely advocated, was successful in four of the five cases. In the fifth case none of the several attempts to heal the sores was in the least successful.

A WIDELY ADVOCATED TREATMENT for ischial pressure sores that are not adequately controlled by conservative treatment is excision of the ulcer and any sinus tract, removal of the ischial tuberosity or underlying bony prominence,[6,10,11] then full thickness pedicle graft to cover the defect.[4,5]

The purpose of the present communication is to review the development of the rationale for this treatment and to report results obtained by the authors with less extensive operative procedures.

Ischial ulcers, in general, are characterized by a small surface opening with a large cavity beneath, while sacral ulcers are usually large and flat with little undermining of the edges.

The first reported attempt at surgical closure of a pressure sore was by Lamon and Alexander[9] in 1945. They carried out secondary closures. Since then the literature has grown rapidly with new surgical and plastic techniques, but the incidence of break-down or recurrence was high until 1947, when Kostrubala and Greeley[7] advocated radical removal of bony prominences underlying the ulcers and subsequent shifting of adequate skin flaps. Two years later they recommended radical removal of the ischial tuberosity.[8] In 1950, Cannon[3] advocated that, if ischiectomy was done for a pressure sore on one side, prophylactic ischiectomy be done on the other side whether there was a sore there or not. Comarr and Bors[4] reported an excellent degree of success with ischiectomy and skin grafting in their large series.

As the surgical and plastic techniques are refined, the incidence of success seems to rise higher and higher. Also, the safety afforded by antibiotics with regard to operations in the usually contaminated areas about pressure sores has contributed in great measure to the efficacy of surgical treatment.

In the following five cases the operative procedures used for healing of pressure sores were less elaborate than those now widely recommended:

CASE 1. A 39-year-old man, paralyzed from the eighth thoracic vertebra for 16 years, had bilateral pressure sores of 18 months' duration. Ischiectomy with split thickness graft was done on the left, and a year later ischiectomy with relaxing incisions and primary closure was carried out on the right. The patient had had no recurrence two years after the first operation and a year after the second.

CASE 2. A 45-year-old patient with seven years of paralysis from multiple sclerosis had pressure sores of a year's duration, and bilateral ischiectomy with primary closure was carried out. A large sacral pressure sore developed a few months later. A sliding graft was applied and it took well. Four months afterward another pressure sore, in the presacral area, was excised and primary closure was done. The wound broke down, and two weeks later coccygectomy and partial sacralectomy (four bodies) were carried out. Within the next six months of observation, there was no recurrence at any of the operative sites.

CASE 3. A 51-year-old man with ependymoma of the cauda equina had an ulcer over the right ischium of two years' duration. It was excised and covered with a double pedicle flap. After two years, ulceration recurred at the same site, and it was excised, with primary closure, but promptly broke down again. A diagnosis of osteomyelitis of the right ischium was made. Secondary closure was carried out but the wound broke down again four months after the operation.

CASE 4. A 46-year-old patient, paralyzed by chordotomy for pain following disarticulation of the left hip, had a sacral pressure sore that had begun five years previously with a pimple on the left buttock, which developed into a sinus tract. Repeated operations, including saucerization of the ischial bone, were carried out. Osteomyelitis developed at the site and a sinus drained continuously. Left

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Submitted May 26, 1960.

ischiectomy with primary closure was done. Two years later there had been no recurrence.

Case 5. The patient, a 50-year-old man paralyzed from the tenth thoracic vertebra since laminectomy for hemangioma of the spinal cord two years earlier, had an ulcer over the right ischium of six months' duration. Conservative treatment—keeping the patient prone most of the day and night and application of Varidase® (streptokinase-streptodornase) and Neosporin® ointment (polymyxin B, bacitracin-neomycin)—was unavailing. Right ischiectomy, undermining the edges of the lesion, and primary closure were carried out. There was no recurrence.

RESULTS

Although the operative procedures were not as extensive as those advocated in the recent literature—primary closure was used, rather than full thickness grafts—in four of the five cases the results were gratifying. There was no recurrence at the previously affected sites. In one patient (Case 3) no procedure used to date has been successful.

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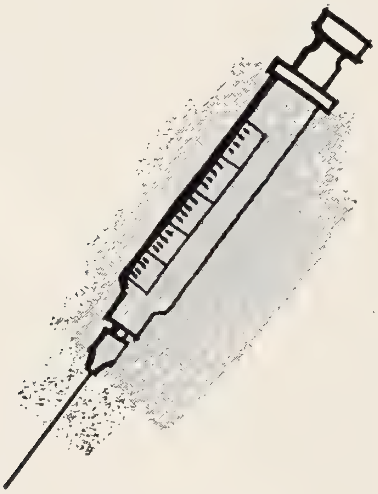

Cineradiographic Studies of the Normal Cervical Spine

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• By considering the cervical spine as several segments with relatively different motions, an understanding of the total possible motions of the cervical spine can be more easily attained.

Reversal of the cervical lordosis is a normal part of the flexion action and can result from positioning of the patient for radiographic studies.

The effect of standing or sitting postures, and methods of initiating flexion of the neck should be considered in the evaluation of routine flexion and extension studies.

Evaluation of individual cervical segments may be accomplished by the use of different methods of initiating flexion.

APPLICATION of cineradiographic methods to studies of the motion of the cervical spine has supplied information for detailed evaluation and review of the movements of the various joints involved.

General considerations: The function of the cervical spine utilizes a complex combination of motions. By studies of the cervical spine segment by segment, each of which has certain motions, it can be seen that the total possible motion of the cervical spine entails an interrelation of individual segmental motions.

The cervical spine consists of five segments showing the "usual" motions, and two transitional vertebrae (the first and the seventh) which may share the motion of the other cervical vertebrae but may also show motion corresponding to that of the next adjoining area. Thus, in the atlas, motion may be observed corresponding to that of the axis, or it may function independently, its motion resembling that of the occiput. It thus simulates a washer or bearing between the skull and the spine, its motion corresponding more closely to that of the skull than to that of other cervical segments. The seventh cervical vertebra shows less motion than the other cervical vertebrae and thus acts more like the thoracic vertebra. If the seventh vertebra becomes sufficiently fixed by disease, by cervical ribs or by long transverse processes, the sixth cervical vertebra may assume its function. The actions of the atlas, however, are sufficiently specialized so that its function cannot be satisfactorily assumed by the other cervical segments. This is particularly true of rotation.

From the standpoint of function, the central cervical segments, the second to the sixth, may be subdivided into *upper* (the second and third), *mid* (the fourth and fifth) and *lower* (the sixth) segments. In such a subdivision the next subjacent intervertebral disc is considered as part of that segment. In a healthy adult the midcervical segment is considered the most active. It has been generally accepted as fact that motion at the fourth and fifth cervical vertebrae (including the disc between the fifth and sixth) is greater than in other portions of the cervical spine. The increased function here has been considered the cause for early development of degenerative changes at this point. The lower cervical segment and the upper cervical segment are approximately equal in function. The difference in mobility between the cervical segments is more apparent in flexion than in extension—that is, the curve of the cervical spine in full extension is smoother than the curve when the spine is in flexion. In flexion, posterior bowing is most pronounced at the midcervical segment, with this segment developing a reversed lordosis when produced by causes other than disease of the spine.

Buetti-Baüml[1] studied the motions of the cervical spine from angles formed by lines drawn along the posterior aspects of vertebral bodies examined in the flexed and extended attitudes. The postulations as to segmental mobility described in the preceding paragraphs agree with his data. In the present study, in order to duplicate the muscle action in the group studied, it became evident that the following factors had to be controlled.

Position: The first group of patients had routine static films in a sitting position but cineradiographs were obtained with the patient in a standing position. The next group of patients, therefore, was studied in both sitting and standing positions by routine films and cineradiographs. Review of the static films showed that in the standing position the amount of extension was reduced and flexion appeared to occur at a lower level. Thus, when standing, the amount of posterior bowing of the midcervical segment produced by flexion was less pro-

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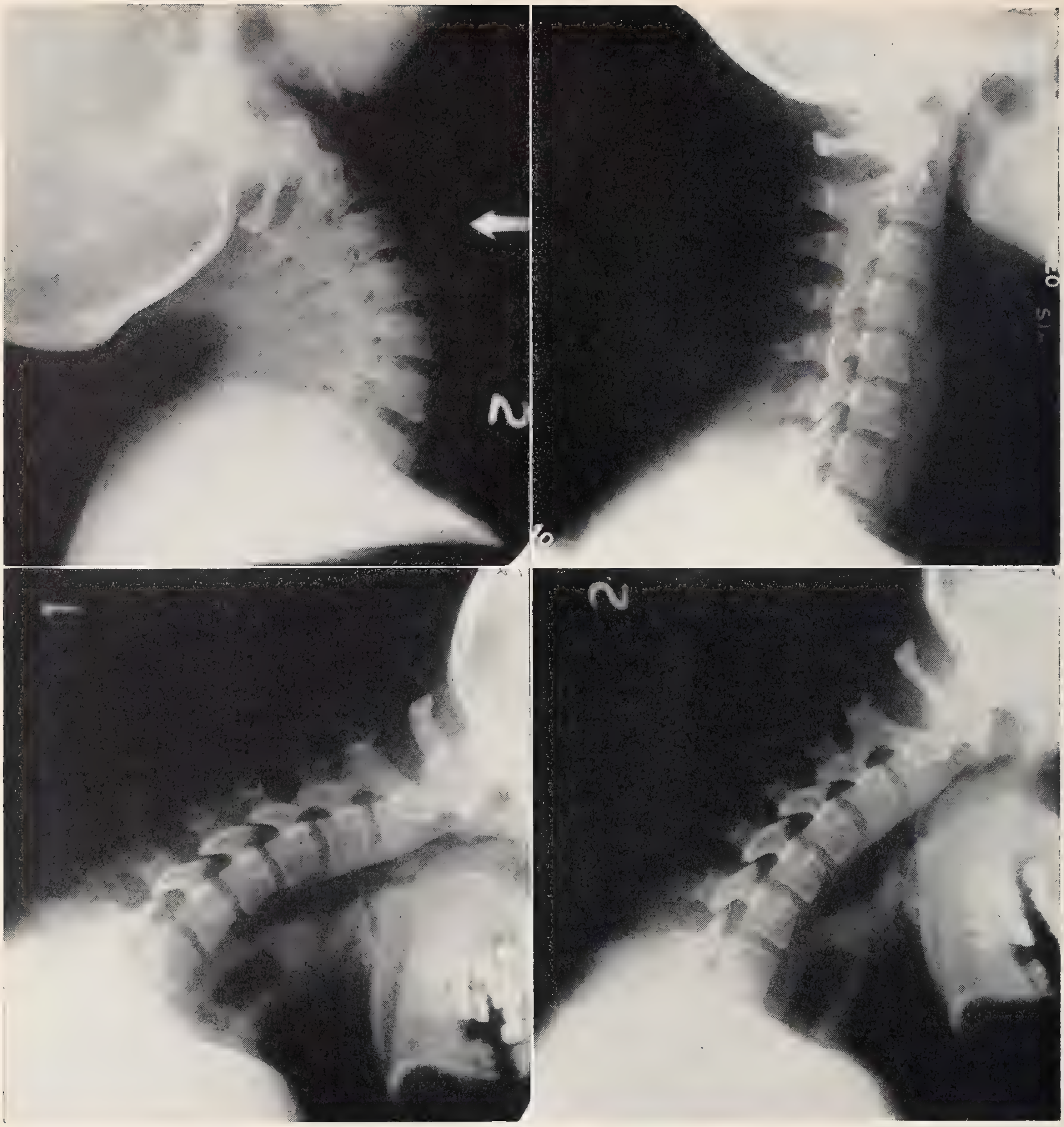

Figure 1.—Flexion and extension studies in a normal 30-year-old woman. *Upper left,* cervical spine in controlled extension. *Upper right,* cervical spine in neutral standing position. *Lower left,* cervical spine in controlled flexion, using chin-motion 1 (described in this article). *Lower right,* cervical spine in controlled flexion, using chin-motion 2.

nounced than when sitting. The degree of glide between the vertebral bodies was also curtailed in the standing position, particularly in extension. This differential motion was more easily demonstrated on the static films than on the cineradiographs but, until appreciated, made correlation between the static and moving films difficult in some cases.

Method of initiating flexion: Comparison between two sets of films made on the same person on the same day showed, in the two instances, a different curve of the cervical spine. In the first study the neck had been flexed and the chin then pulled in, whereas on the second set of films, the chin had been pulled in first, and the neck then flexed. A series of patients were examined in which the patient first flexed the neck without moving the shoulders, and with the head semi-extended. When the maximum range of such motion was attained, the chin was pulled in. This will be referred to hereafter as chin-motion 1. Films were next made with the patient's chin pulled in to the greatest extent, and the neck flexed to the maximum (chin-motion 2). These studies were made in both standing and sitting positions.

The effect of the two different head motions (Figure 1) was to produce an accentuation of the midcervical reversed lordosis when chin-motion 2 was used. With chin-motion 1, greater flexion in the lower cervical segment and less reversal of the normal midcervical lordosis was observed. On the cineradiographs it was seen that chin-motion 1 caused the head to go into relative extension, straightened the midcervical lordosis and resulted in early flexion at the cervicothoracic junction. As flexion continued, there was gradual development of the expected reversed lordosis in the midcervical segment. This lordosis, however, became pronounced only after the chin had been fully drawn in.

With chin-motion 2, the first change was that of backward motion of the lower cervical segment, which produced straightening of the lordosis at this level, and a forward movement of the upper segment. By forcibly pulling in the chin, it was possible to produce a sharp posterior angulation of the midcervical segment. As the flexion action continued, the lordotic reversal in the lower cervical segment progressed and the sharp angulation lessened. The total flexion in the lower cervical segment with this particular motion was less than that seen with chin-motion 1.

When chin-motion 1 was used to produce flexion in the sitting position, the curve which the spine developed approximated that seen in the films taken in standing position. A greater reversal of the lordosis still occurred, however, in the sitting position.

By utilizing these various motions, it is possible to study almost selectively the potential motion of the individual cervical segments.

Specific consideration: As a patient ages, there is general reduction in the segmental and total motion of the cervical spine. If focal degenerative changes are present, one segment may lose its major action and other segments assume its function. In childhood, the upper cervical segment is more active because of the position of the scapula and clavicle. As these bones descend, the midcervical segment assumes the greatest action. Later the motion once more becomes proportionately greater at the higher levels as decreased function from degeneration affects the mobility of the midcervical segment. The total motion pattern of the cervical spine of any one person is rather characteristic of that person. This is reflected in the varying forms of the spinous processes, the shaping of vertebral bodies and the varying muscular development. Thus, there is no one average motion that can be ascribed to the cervical spine but rather a range of normal motions. In one person, elongated transverse processes of the seventh cervical vertebra caused restriction of the flexion action in the lower cervical segment when studied in the standing position. This restriction was not as apparent in the sitting position. Such elongated processes may require the same consideration applied to a transitional lumbosacral vertebra.

INDIVIDUAL JOINT MOTION

In his report on cineradiographic studies of the cervical spine, Fielding[2] described in detail the various motions possible. Only a brief résumé of such motions will be given here.

Occipito-atloid: Only flexion and extension are observed at this joint. The degree of these motions as related to total cervical spine motion depends upon the position in which the head is held. The motion occurs independently or in combination with atlanto-axial motion. Evaluation of this joint can be accomplished by observing a nod motion with rather strong extension component. The posterior arch of the atlas can be observed in some persons to nestle in the impression on the occipital bone when the head is fully extended.

Atlanto-axial: This joint allows most of the rotation of the head, other cervical segments coming into action only in extreme rotation. Flexion and extension can be observed separately or in conjunction with occipito-atloid motion, as in the nod. In extension and flexion the anterior arch of the atlas can be observed to move up and down on the dens. Fielding reported a telescoping action of the atlas on the dens during rotation owing to the comparative form of the articulating facets. This action was not observed in the present study but may not have been adequately demonstrated.

The importance of the transverse ligament-dens relationship was observed in three patients with congenital fracture of the ódontoid. In these patients, a reverse curve of the midcervical segment could not be produced in extreme flexion. Flexion of the head occurred almost entirely in the atlantal-axial joint with only a straightening of the midcervical lordosis.

General cervical motion—zygapophyseal: During flexion from the neutral position, the zygapophyseal joints showed the greatest change. This variation occurred when the intervertebral discs were undergoing alteration in shape, the change being from that of a wedge with its greatest width anteriorly, to a parallel form. The fulcrum of motion at this time appeared to be shifting from a point approximately at or slightly behind the posterior aspect of the vertebral body, to a point approximately at the midpoint of the body. As flexion continued, upward and forward glide of the zygapophyseal joints was

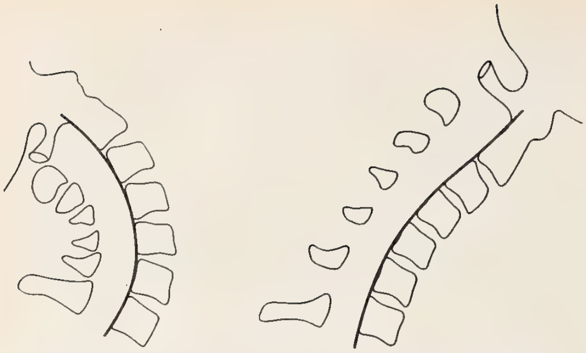

Figure 2.—Diagram of cervical spine in flexion and extension. A smooth curve is produced along the posterior aspects of the vertebral bodies in extension. The curve traced along the posterior aspect of the vertebral bodies when the neck is flexed shows the form of a bow rather than an arc. This reflects the varying degree of participation of the cervical segments in the flexion action.

observed until there was only minimal apposition of the superior surface of the inferior facet with the inferior surface of the superior facet. The second and third cervical facets, which tend to be smaller and asymmetric, showed less pronounced motion in adults. At the extreme of flexion, the facets tended to be angled on each other. This allowed the spinous processes to spread. Widening of the superior segment of the zygapophyseal joints was produced by continued extension after the maximum range of downward glide was reached.

Intervertebral discs: The intervertebral discs showed two motions during flexion—anterior glide of one vertebral body on the adjoining body, and change in shape of the intervertebral disc. As the head moved from the neutral to flexed position, the anterior height of the intervertebral disc decreased and the posterior vertical dimension widened. The forward glide developed later in the course of the flexion. The combination of these two actions resulted in a rocking motion. The overriding of the anterior inferior margin of one vertebral body on the anterior superior surface of the next inferior body would account for the frequently seen notch or irregularity of the inferior body. In maximum flexion, the discs in the midcervical segment were wider in the posterior than in the anterior dimension. This was more evident and constant in the midcervical segment. This difference in mobility produced a curve along the posterior surfaces of the vertebral bodies which was smooth but shaped like a bow rather than a semi-circle (Figure 2).

As extension occurred, there was downward and posterior glide of the zygapophyseal joints until the impingement of the spinous processes limited further extension. If extension was forced after the zygapophyseal joints completed maximum slide, further opening of the discs appeared. This resulted from some further leverage of the discs, with the zygapophyseal joints acting as the fulcrum.

Combined motion: The cervical spine actually functions by combinations of the above motions. When a patient suffering from pain in the cervical area places his head in the position accentuating pain, he tends to swing the head in circles. Cineradiographs recorded during this motion demonstrate a combined flexion-extension and rotary motion with upward and forward glide of the zygapophyseal joints of one side, and a downward and backward glide of the opposite side. The changes of the discs observed in flexion and extension can be observed at the same time. Side-to-side bending is limited in the cervical area; thus, narrowing of the lateral margins of the discs is not as pronounced a phenomenon.

Equipment used: A commercial model Westinghouse Cine Fluorex unit was used in all these studies. Radiation exposure was measured at the skin surface by means of a Victoreen rate meter, and for an average person measured approximately 3.4 roentgens per minute in the central beam. This was delivered to an area measuring approximately 5 by 5 inches with the field defined by the lead shutter of the unit. The total duration of exposure for the average patient was approximately four minutes. Since the equipment used will not measure a rate of less than six milliroentgens per minute, male gonadal exposure rate was not measurable.

COMMENT

Cineradiography permits the study of diseases of the spine which relate to abnormal function as well as to anatomic distortion. The spine can be evaluated in a more physiologic manner. In addition, patients who for physical reasons are unable to maintain proper position for static film study can be examined by this method. Those positions and movements which produce symptomatology can be recorded as they occur, and evaluated as to underlying disturbance.

To date 80 examinations of the kind herein described have been conducted. Flexion and extension studies with routine methods were also obtained in most of these patients.

Various diseases affecting the cervical spine have been studied and will be reported subsequently.

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Trimalleolar Fractures

A Convenient Medial Approach for Surgical Reduction

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• In dealing surgically with trimalleolar fracture of the ankle joint in which the comminution is not severe, the medial approach is convenient and practicable. In the process of reducing the fracture the alignment can be directly observed. The fixation of the posterior fragment is done from the front rather than from the back of the tibia. Removal of the screws used for fixation is made considerably easier.

TRIMALLEOLAR FRACTURES are among the most serious of injuries to the ankle. By definition, the injury involves both medial and lateral malleoli and either the anterior or the posterior buttress of the tibia. As preface to a discussion of the indications for surgical treatment and a description of a method of approach that is simpler and easier than others that are in common use, a review of the anatomical structure may be helpful.

The ankle is a joint of saddle type, with the talus well protected by bony buttresses on both sides. Ligamentous support of the ankle joint is unusually good. The medial and lateral ligaments about the ankle joint—for example, the deltoid on the medial side—may be thought of as consisting of three major sections. They are the central section, which extends from the medial malleolus to the os calcis (the tibiocalcaneal), and the anterior and posterior section which are both attached to the talus ligaments. Similarly divided are the ligaments about the lateral side of the joint. Broadly, there is a large central section which may be called the fibulocalcaneal ligament, and anterior and posterior to this section are the talofibular ligaments. The tibiofibular ligaments hold the tibia and fibula together close to the ankle joint and constitute support so strong that stress strong enough to fracture either the medial or lateral malleolus or both nearly always damages the ligaments also. Often if there is great vertical stress, either the posterior portion of the tibial saddle or the anterior portion of the tibial saddle is fractured off. With the stabilizing structures thus removed, dislocations occur.

Of principal concern in considering operation are the degree of instability and the degree of comminution: Is operation warranted, and, if it is, can the anatomical structure be improved. Since both malleoli are fractured in so many cases, let us consider this as the usual occurrence, the decision as to whether to operate then resting on the degree of stability of the ankle joint. If the joint is dislocated and it is observed on reducing the fracture that the ankle mortis is not stable and that the fracture easily redislocates, then it is usually necessary to provide internal stability. In general, when approximately one-quarter or more of either the anterior or posterior weight-bearing surface of the joint is involved, the instability is severe enough to necessitate such a procedure. In those circumstances, open reduction is the treatment of choice. Sometimes, usually in elderly patients, there is so much comminution of the lower end of the tibia that joining the pieces together well enough to provide a good ankle joint would be impossible. In such cases the same rules that apply to treatment of comminuted wrist fractures in the elderly should apply.

Although most of the reports in the current literature recommend a posterior or posterolateral approach for dealing with a posterior fractured fragment of the tibia, a medial approach such as is used for medial malleolar fractures is easier and serves quite as well. Indeed I consider the medial "J"-type of incision just behind the medial malleolus and extending upward about three or four inches and forward below the malleolus far enough so that the flap can be pulled forward in front of the medial malleolus, to be the approach of choice. Abrasion of the skin at that site is a contraindication, but not an absolute one if operation is being done soon after injury.

Once the fracture site has been opened and the medial malleolar fracture is displaced merely by pulling on the foot, the talus can be pulled away from the tibial articulation, permitting inspection of the degree of damage to the joint cartilage. It is also possible to see how much of the joint surface is involved in the fracture site. Reduction of the posterior or anterior fragments can then be accomplished, while traction is being applied, by pushing the posterior fragment down until the joint surfaces are aligned. Occasionally small pieces of bone that have become wedged in

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the fissure have to be removed before the main fragment can be seated firmly. Although it may not hold quite as well, a screw placed from the anterior to the posterior is adequate and so much easier than putting it through from the back to the front that I consider it the method of choice for holding this particular fracture. After a hole of suitable gauge has been drilled through the fragment and the intact bone, a screw long enough to span the full diameter of the lower end of the tibia is placed. Occasionally it is necessary to place two screws to hold the pieces together. With this done, the reduction of the dislocation should be relatively easy to maintain and, when relaxed, the ankle joint should be quite stable. It is then possible to deal with the medial malleolus. As a general rule, nothing need be done to the lateral malleolus, since after the medial malleolus is reduced, the talus can be held firmly against it as a buttress. After the medial malleolus has been reduced, a screw may be used to hold the fragment in place, but as a general rule I prefer merely to place a large Kirschner wire or small Steinmann pin through the medial malleolus to hold it solidly in alignment with the tibia. Once this has been done, the ankle can be treated in a manner similar to that usually used for a Pott's fracture. The wound is closed in the normal anatomical fashion, dry dressings are applied, and a long leg cast, with the knee flexed to 45 degrees and the foot at approximately 90 degrees, is used for immobilization. It is usually desirable to place the foot in some inversion in order to maintain contact between the talus and the malleolus. In this position, the lateral malleolus and the lower end of the fibula will usually reduce quite well. Good results are obtainable if this method is done early, before connective or scar tissue forms between the tibia and the fibula.

DISCUSSION

The advantages of the approach described for the treatment of the posterior fragment, as well as the anterior fragment of the tibia, can be best appreciated when the time comes for the removal of some of the hardware. Usually this is done between two and six months after the patient is permitted to resume weight-bearing.

Nearly all observers agree that anterior fragments should be fastened with a screw placed through the anterior fragment into the posterior main shaft of the tibia. The screw so placed can be removed quite easily by making a short incision, under local anesthesia, directly over the head of the screw. It was the ease of reduction of this anterior fragment that led to the procedure herein described for extending the usefulness of this method to the posterior fragment. It has been used for more than ten years with good results.

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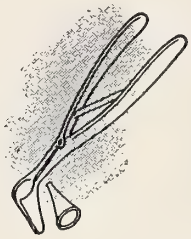

Efforts to Control Antibiotic Resistant Infections

A Coordinated Community Effort

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• Since June 1958 the medical society, the medical institutions and the medical professions in Orange County have conducted an intensive program to control and prevent the spread of antibiotic resistant infections.

In this community-wide effort, rules designed to protect the hospital population against infectious dangers have been developed and enforced, courses in food-handling and housekeeping sanitation have been given to hospital employees, and a program to solve some of the laboratory aspects of antibiotic resistant infections has been developed.

RESISTANCE of organisms to the commonly used antibiotics has spread from gram-positive cocci, such as the staphylococcus aureus, to gram-negative bacilli, such as E. coli and Pseudomonas aeruginosa.[2] The phenomenon has become increasingly familiar to physicians and hospital administrators in all civilized countries.

The voluminous literature on these dramatic, and at times tragic, changes in the ecology of infectious diseases has aroused all medical disciplines to a vigorous concern.

Surgeons, pathologists, microbiologists, obstetricians, pediatricians and the general physicians are the ones who most frequently see staphylococcal disease first hand, but no medical specialty is exempt, including the public health physician. On several occasions within the author's knowledge, a psychiatrist has been called in to deal with the mental depression and hopelessness that have led patients with such infections to consider suicide.

There is reason to believe that the knowledge and skills of the professional epidemiologist have not been used enough. An infection which involves not only the patient and the institution where he is currently housed, but also the patient's family and the community, cannot be looked upon as an isolated phenomenon such as, say, a ruptured appendix.

The insidious nature of staphylococcal disease has caused the medical professions to be slow to realize the magnitude and the gravity of the ecologic changes that have taken place.

HEALTH AUTHORITIES AROUSED

On October 10, 1958,[3] the California Conference of Local Health Officers, by resolution, formally recognized antimicrobial resistant infections as "a serious problem to the population of California" and outlined "the responsibilities of local health departments in the prevention and control of hospital acquired staphylococcal infections."

Among the areas of responsibility outlined in the resolution were to:

1. "Investigate and report on incidence and prevalence through the following possible devices: Laboratory reports, telephone surveys, postcard surveys and public health nursing visits.
2. "Promote the active participation of local hospitals and medical organizations in the prevention and control of hospital infections and coordinate these activities in a community-wide program.
3. "Extend public health laboratory services, as possible, to obtain more adequate identification of staphylococcal infections.
4. "Develop in-service staff orientation, education, and training for health department personnel and offer assistance in these programs for all levels of hospital personnel.
5. "Develop for the local health department (and encourage local hospitals to develop for each hospital) written manuals of agency policies and procedures for the prevention and control of staphylococcal infections.
6. "Provide, or obtain, technical and administrative consultation to all hospital services, committees and physicians in the community. Conduct inspections and enforce special regulations if required by local conditions."

In this succinct statement the Conference of Local Health Officers stated the problem and defined the responsibilities and relationships which, if followed, should have accomplished the maximum results within the shortest time.

However, there is even now, long after the resolution was passed, reason to doubt if many health departments in California have made acceptable progress toward establishing a well-coordinated community program for the control of antimicrobial resistant infections.

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An open poll might prove embarrassing to all of us. But a quick comparison with the experience of one county (Orange) may permit other health departments to grade their own efforts. Orange County's experience is as follows:

1. Surveillance

In the *telephone survey*, a 10 per cent sample of newborn infants and their mothers proved to be too small. Also the survey involved too large a commitment of personnel time and was too retrospective to be of immediate value. After one year, it was discontinued.

Postcard surveys were attempted on a small scale by the infections committees in some hospitals but were weighted too heavily toward those who had complaints, and they failed for lack of consistent patient and physician cooperation. These surveys were discontinued after as little as a few weeks to as much as several months.

Laboratory reports of coagulase-positive staphylococcus cultures to a central agency (the health department) provide a sensitive index of the fluctuations of the infection in the community. However, the commitment of the health department's statistical skills to the telephone survey resulted in inadequate use of this epidemiological tool. These were discontinued after 18 months.

Public health nursing visits, complaints of patients and informal *physician reports* are now the principal sources of information in Orange County. Naturally, these reports indicate only the continued existence of the infections problem and not its magnitude.

2. Coordination of Community Effort

Through the county-wide Infections Control Committee, manned by various medical disciplines and appointed by the county medical association, a significant degree of coordination of effort has been achieved in Orange County. Representatives of other disciplines served as consultants.

Uniformity of practice, such as the regulation of visiting to hospitals; exchanges of information, on such things as the effectiveness of various commercial disinfectant preparations; review of educational materials, such as units of instruction for hospital employees, films; and the over-all strategy of the effort are accepted functions of this area-wide committee.

Most important to the success of this area-wide committee was that an administrative outline was prepared, and accepted, at the outset. It seemed essential that responsibilities and relationships of the various professional and institutional interests be clarified at the start.

Next in importance to acceptance of the administrative outline was that the committee recognized and accepted its limitations. The committee realized that its duty was to support, but not to usurp, the responsibilities of the hospital infections committees.

The Orange County Infections Control Committee has met on an average of every six or seven weeks since it was established in June 1958.

3. Laboratory Support

Another function of this area-wide Infections Control Committee was, through a subcommittee of laboratory personnel, to initiate laboratory studies designed to follow the natural history of antibiotic resistance and to find ways of solving laboratory problems through the coordinated efforts of the various laboratories.

An example of this coordination of laboratory effort is a current study of the value of the various disc methods for determining organism sensitivity to antibiotics, compared with the (1) tube dilution and the (2) Pepper Laboratory replicating methods. This study resulted from the observation by clinicians that the antibiotic sensitivity pattern indicated by the discs is not always confirmed by the patients' responses to the administration of the antibiotic that the discs indicate is effective.

Steers[4] of Philadelphia, in a recent personal communication, said, "It has come to my attention that discs from different manufacturers may vary from no trace of a stated drug per disc to as much as 2000 per cent."

As a consequence, the Division of Laboratories in the Orange County Health Department is preparing to do comparative antibiograms against test organisms, using concentrations of the drugs not to exceed the maximum obtainable concentration of a given drug in a patient's circulating blood. Hospital and private laboratories are to do routine antibiograms, as usual; the validation of disc concentrations will be done by the health department laboratory.

4. In-service Training Programs

Walter[5] showed conclusively that environmental sepsis in the hospital is the result of the activities of everyone within the hospital walls, not the professional personnel alone. The maid, the orderly, the maintenance man, the laundry helper, and all the rest, can either assist in the control and elimination of hospital sepsis, or, by ineptitude or negligence, perpetuate a septic environment.

In order to bridge the gaps in the training of subprofessional personnel, the county-wide Infections Control Committee directed that training courses be set up for these employees as soon as possible.

Since food handling courses for restaurant workers were already in operation, it was easy to begin classes for hospital food handling personnel immediately. In addition, training outlines and visual aids have been prepared for housekeeping and maintenance employees and for laundry personnel.

The food handler courses were preceded by a detailed survey of the conditions in each hospital kitchen and food service area. In most hospitals the conditions were shocking.

Owing to the size of hospital maintenance staffs and the high turnover in hospital help it is anticipated that the courses will have to be repeated frequently. Should the teaching staff ever catch up with the hospital job, they will move into convalescent and nursing homes where antibiotic resistant infections are even more prevalent than in general hospitals.

5. Policies and Procedures Manuals

Due in large part to the encouragement of the county-wide Infections Control Committee, eight of Orange County's 14 hospitals have now completed and filed with the committee their revised policies and procedures manuals for the control of infections.

6. Consultations

With the assistance of the State Department of Public Health, technical consultation on the operation of maternity and newborn nursery services is provided by the Maternal and Child Health and the Public Health Nursing divisions of the Health Department. This is not new, but it fits readily into the pattern of support which is approved by the Infections Control Committee.

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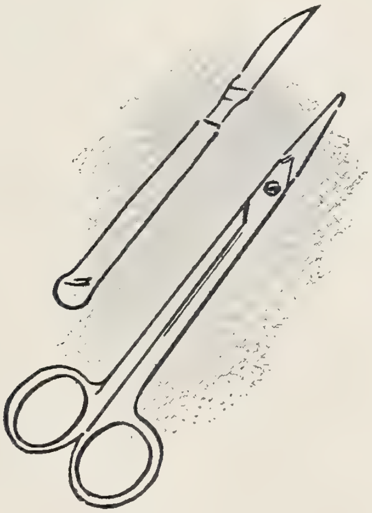

Maternal and Perinatal Deaths in California

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• In a 29-month period, 151 of 373 deaths of California women occurring during or within 90 days of termination of pregnancy were studied jointly by the California Medical Association and the California State Department of Public Health. Twenty-two per cent of the deaths reviewed were considered unavoidable. In 74 per cent, one or more avoidable factors were identified. Avoidable factors could not be identified in 4 per cent of the cases.

Thirty-three per cent of the cases considered to have avoidable factors were attributed to be solely the responsibility of the attending physician. Inadequate hospital facilities were held responsible in less than 1 per cent of deaths, while responsibility in 26 per cent of the deaths was laid directly to patient error or refusal. In 40 per cent of the avoidable deaths, more than one avoidable factor was identified.

Nonobstetric conditions accounted for the greatest proportion of the deaths, followed by hemorrhage, toxemia of pregnancy, sepsis, abortion and ectopic pregnancy.

The findings of this study compare closely with those of similar studies in other states, including Minnesota and Massachusetts.

ALTHOUGH California's maternal mortality rate has steadily declined and in 1958 reached the lowest point thus far in its history, the California Medical Association and the State Department of Public Health feel that this rate can be reduced even further. In 1920, the California maternal mortality rate was 70.5 per 10,000 live births. This rate has fallen to 2.9 per 10,000 live births in 1958, or 103 resident maternal deaths for that year. Perinatal mortality rates have also declined but the rate in 1958 was slightly higher than in 1957, reflecting the increase in neonatal mortality for that year.

Initial steps to study causes for maternal and perinatal deaths were taken more than three years ago by the California Medical Association. It established the Committee on Maternal and Child Care to plan and direct continuous statewide studies of maternal and perinatal deaths. The membership of the committee includes obstetricians, pediatricians, general physicians, a pathologist, an anesthesiologist and a public health physician. Through this committee, the C.M.A. has joined forces with the State Department of Public Health to review all maternal and certain perinatal deaths occurring in California so that causes of death and avoidable factors can be identified. This study is equally financed by the California Medical Association and the State Department of Public Health.

Thus far the Committee on Maternal and Child Care has concentrated on the problem of maternal mortality. In these studies, for the purpose of identifying cases, a maternal death is considered to be one that occurs during or within 90 days after the termination of pregnancy.*

Four regional maternal mortality review committees were formed to begin with, and later a fifth committee was added because of geographical problems encountered. Each of these five committees has a chairman, appointed by the state committee, who is responsible for selecting members of the regional committee (with approval of the state committee), for assigning cases to special consultants, for calling meetings of the committee and for over-all administration of the maternal mortality studies for the region. The regional committee, like the state committee, has broad representation. It consists of obstetricians, general physicians, a pathologist, an anesthesiologist and a public health physician.

Qualified obstetricians in private practice in each of the five regions are appointed as special consultants in obstetrics by the State Department of Public Health on the recommendation of the regional chairman. These consultants, who are reimbursed for their services by the State Department of Public Health, are given responsibility for reviewing hospital records, coroners' reports and other records, as well as for interviewing attending physicians to obtain detailed information regarding each case under consideration by the regional committee.

Evaluation of each maternal death is on a completely voluntary basis. That is, before a case record is reviewed, the committee must have the attending physician's permission to include it in the statewide study. When information regarding a sufficient number of cases (usually 10 or 15) has been abstracted

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*This definition is unlike that used in compiling official maternal death data. In calculating official maternal death statistics, a maternal death is one in which the underlying cause of death can be assigned to the category labeled Deliveries and Complications of Pregnancy, Childbirth and the Puerperium, according to codes (640-689) in the Seventh Revision of the International Statistical Classification of Cause of Death.

by the special consultants in a region, the chairman of the regional committee calls a meeting of his committee. The consultant presents data on the cases to the committee, which then attempts to determine: (1) What was the cause of death; (2) whether or not the committee will accept as fact the stated cause of death on the death certificate; (3) whether or not pregnancy and labor were related to the death; and (4) what avoidable factors, if any, were present.

In evaluating maternal deaths for avoidable factors, several assumptions are made: (1) The attending physician possesses all the knowledge currently available related to the factors involved in the death; (2) by experience he has reached a high level of technical ability; and (3) he has available to him all the facilities present in a well organized and properly equipped hospital. Consideration is also given to how well the patient followed the physician's advice, if, indeed, she sought medical care at all.

Special forms for recording pertinent information obtained by the obstetrical consultant have been developed. These forms are designed so that they do not disclose the identity of the patient, the hospital or the attending physician. As a further safeguard, the State Legislature passed a bill in 1959 (Assembly Bill 595) which was approved by the Governor, adding Section 211.5 to the Health and Safety Code, providing for the confidentiality of all records insofar as the identity of the individual patient is concerned. Section 211.5 states that "All records of interviews, written reports and statements procured by the state department or by any other person, agency or organization acting jointly with the state department, in connection with special morbidity and mortality studies shall be confidential insofar as the identity of the individual patient is concerned and shall be used solely for the purposes of the study. The furnishing of such information to the state department or its authorized representative, or to any other cooperating individual, agency or organization in any such a special study, shall not subject any person, hospital, sanatorium, rest home, nursing home, or other organization furnishing such information to any action for damages. . . . Nothing in this section shall prohibit the publishing by the state department of statistical compilations relating to morbidity and mortality studies which do not identify individual cases and sources of information or religious affiliations."

Local health departments participate in these studies in a number of ways. At least one member of each regional committee represents the medical staff of a local health department. In addition, full-time local health departments are responsible for identifying all maternal deaths in their area. Copies of all death certificates filed with the local health officer mentioning factors related to pregnancy are sent directly to the chairman of the regional committee. Certificates of maternal deaths filed in the areas having part-time health officers or in the counties contracting with the State Department of Public Health for public health services are sent to the regional chairmen by the State Department of Public Health. In this way regional committee chairmen are promptly notified of maternal deaths. Individual local health officers are also invited periodically by the regional committee chairmen to take part in the committee discussions. In certain cases, particularly those involving public maternity care, the local health officer has a responsibility to assist in initiating such changes in public obstetrical care as the maternal death studies indicate are needed.

Considerable time was required to plan the procedures for studying each of the deaths. In August 1957 a tentative plan was tried out. The trial provided valuable experience; after a number of changes in procedures and in record forms, the present study got under way January 1, 1959. Limited data are available on all cases studied between August 1957 and December 31, 1959. During that period, 373 death certificates indicating a maternal death were filed in California. An exact count of the number of deaths occurring in pregnant women or within 90 days of termination of pregnancy is not available. If pregnancy or a condition associated with pregnancy is not mentioned on the death certificate, the case may be missed as a maternal death. From information obtained by matching death certificates for California women aged 15 through 44 against birth certificates and fetal death certificates, it was possible to estimate that at least 25 per cent of the maternal deaths as defined in this study would be missed if only death certificate information was used to identify cases. Both because it was recognized that the regional committee would be quite busy studying the cases easily identified and because it was estimated that use of the matching techniques to identify maternal deaths which would otherwise be missed would cost twenty to twenty-five dollars per case, it was decided to forego this procedure for the time being. Moreover, in Minnesota it was found that even matching birth and death certificates is not a sure way of identifying all cases.[2] In that state additional cases have been identified by reports from practicing physicians, hospitals, nurses and newspapers.

Up to January 1 of this year, 151 of the 373 deaths had been studied by a regional review committee. Two additional deaths were not reviewed either because permission of the attending physician could not be obtained or the coroner refused to give permission for review of his records. Of the

TABLE 1.—*Selected Data from Maternal Mortality Studies in California Compared with Similar Data in Other States*

State and Year of Study	Maternal Mortality Rate*	PER CENT						
		Unavoidable	Indeterminate	Avoidable	Avoidable Factors Attributable to			
					Physician	Patient	Hospital	Combination
California 1957-1959 (151)	2.9	21.8	4.0	74.2	33.0	25.9	0.9	40.2
Iowa[3] 1953-1954 (73)	1.7	34.3	6.5	59.2				
Massachusetts[5] 1954 (55)	1.5	32.7	7.3	60.0	60.6	30.3		9.1
Minnesota[2] 1950-1954 (177)	2.8	54.3	1.1	44.6	87.3	5.1	7.6	
New Hampshire[4] 1958 (4)	4.2	25.0		75.0	66.7	33.3		
South Carolina[7] 1955 (56)	8.9	25.0		75.0	47.6	38.1	14.3	
West Virginia[1] 1958-1959 (7)	3.7	42.8		57.2	25.0			75.0

*Rate per 10,000 live births (California rate is for 1958—all other rates are for 1956-1957).

NOTE: Numbers in parentheses are the number of deaths studied.

deaths studied, 33 (22 per cent) were considered to be unavoidable; avoidable factors could not be determined for six cases (4 per cent); and 112 cases (74 per cent) were judged to have one or more avoidable factors associated with them. In 37 (33 per cent) of the avoidable cases the avoidable factors were considered by the review committees to have been solely the responsibility of the attending physician. In only one case was avoidable death attributed solely to inadequate hospital facilities. The avoidable factors were judged to have been the responsibility of the patient only in 26 per cent of the cases. Forty per cent of the avoidable deaths were attributed to more than one factor.

Examples of the role physicians played in these maternal deaths include the following:

1. Poor timing of a surgical procedure.
2. Failure to take appropriate steps to establish the diagnosis of an obstetrical complication, including failure to examine the patient and failure to obtain consultation.
3. Administration of excessive amounts of parenteral fluids.
4. Inappropriately discharging a postpartum patient who had pneumonia.
5. Failure to take steps promptly to diagnose cause of hemorrhage and, when diagnosis was finally established, failure to treat vigorously to avoid shock and death (fibrinogen deficiency).

The causes of the 151 maternal deaths studied to date by the regional review committees have been assigned to groups of causes of death which are used by the National Office of Vital Statistics. These are based on the Seventh Revision of the International Statistical Classification codes for causes of death. The numbers of deaths in these various groups (with code numbers given in parentheses) are as follows:

1. Hemorrhage (643-644, 670-672)—12 cases (8 per cent). This category includes such causes of hemorrhage as placenta praevia, abruptio placenta, retained placenta and atonic bleeding.
2. Toxemia of pregnancy (642, 685-686)—10 cases (7 per cent).
3. Sepsis (640-641, 681-682, 684)—9 cases (6 per cent). This includes genito-urinary tract infection during pregnancy, as well as puerperal sepsis.
4. Abortion (650-652)—30 cases (20 per cent). This includes spontaneous abortion and self-induced and criminally-induced abortion with and without sepsis.
5. Ectopic pregnancy (645)—8 cases (5 per cent).
6. Other maternal causes (646-649, 660, 673-680, 683, 687-689)—28 cases (18 per cent). This includes deliveries complicated by malposition of fetus, cephalopelvic disproportion, uterine inertia, lacerations, air embolism, cerebral hemorrhage in the puerperium.
7. Nonobstetric causes—53 cases (35 per cent). Includes accidental deaths, malignant disease, pneumonia, congenital malformations.
8. Cause undetermined—1 case.

Autopsy was done in 76 per cent of the 151 cases studied.

A comparison was made of selected data for the deaths studied in California concerning avoidability of death and types of avoidable factors with similar data obtained by studies done in other states (Table 1).

At a later date the Committee on Maternal and Child Care will publish more detailed reports of the data now being assembled. However, preliminary evaluation of these data shows that:

1. Although the vast majority of deliveries in California occur in hospitals (98.8 per cent), only 80 per cent of the maternal deaths occur in hospitals.
2. Nineteen per cent of the maternal deaths occurred in Negroes while 8 per cent of the live births are Negro.
3. One-fourth of the maternal deaths are in the 35-year-and-older age group, but only one-tenth of the live births in California are delivered of mothers in the 35-year-and-older age group.
4. Thirty per cent of the deaths studied occurred in undelivered women.
5. Fifty-three per cent of those who died following delivery, did so within 24 hours of delivery.

6. Thirty per cent of the women who died were known to have received no prenatal care; however, 42 per cent of these deaths were classified as resulting from abortion.

7. Of those who did obtain prenatal care and the month it was started was known, one-half started this care in the first trimester of pregnancy.

8. Although 56 per cent of the live births in California occur in private nonprofit hospitals, only 42 per cent of the 151 maternal deaths occurred in such hospitals.

Turning again to perinatal mortality, this rate in California dropped from 53.8 per 1,000 live births and fetal deaths in 1921 to 29.3 in 1957 and then rose to 29.4 in 1958. In California, the perinatal mortality rate is a figure which represents the total number of fetal deaths at 20 weeks' gestation or more plus the total number of infant deaths at less than seven days of age, divided by the total number of live births and fetal deaths at 20 weeks' gestation or more. This calculation is based on recommendations of the Public Health Conference on Records and Statistics, an advisory group to the Surgeon General of the United States Public Health Service. In recent years there have been approximately ten thousand perinatal deaths a year in California. Of these, approximately 6,000 are neonatal deaths (under one week of age). Prematurity or conditions related to prematurity are reported on death certificates to account for the greatest proportion of the neonatal deaths, followed by atelectasis, birth injuries and congenital malformations. Detailed information as to causes of fetal death is not available.

Because of the large number of infants involved, the Committee on Maternal and Child Care has concluded that studies of perinatal deaths are best done either by individual hospitals or by local medical societies, particularly in the less populated counties in California. With this in mind, the committee has encouraged local medical societies to establish their own perinatal mortality study committees. In a number of hospitals, study committees have also been formed. In addition to these local efforts, the state committee is planning to review for a limited time certain causes of perinatal death. Initially, the committee plans to study deaths associated with hemolytic disease of the newborn. This condition was picked for several reasons. First, being seventh in order of frequency as a cause of neonatal death, it accounts for approximately 200 deaths each year. This is a number that can be easily studied by the state committee. Second, on reviewing information available from all 1956 death certificates mentioning hemolytic disease of the newborn or conditions associated with this disease, it appeared that a significant proportion of these deaths, particularly those occurring 12 hours or more after birth, can be prevented. One expert in pediatric hematology[6] who reviewed the 1956 death certificate data believed that approximately 50 per cent of the infants dying of hemolytic disease of the newborn after 12 hours of life could have been saved had the mother received "ideal" prenatal care and "ideal" management of delivery and had the infant been given "optimum" treatment.

Procedures being developed by the Committee on Maternal and Child Care and the State Department of Public Health for studying these cases are similar to those used in studying maternal deaths. Special forms for recording pertinent information for committee review have been developed.

The State Department of Public Health has been given responsibility for the statistical analysis of the data obtained from both the maternal and perinatal death studies. Using the analysis of these data, the Committee on Maternal and Child Care will prepare reports periodically. Summaries of interesting cases having particular teaching value will be submitted from time to time for publication in state or local medical society publications. Of course, these reports will provide no way of identifying patients, physicians or hospitals.

In addition, deficiencies in hospital facilities will also be carefully evaluated by the committee and, where necessary, these will be reviewed with the administrative and professional staffs of the involved hospital as well as with the California Hospital Association.

Bureau of Maternal and Child Health, California Department of Public Health, 2151 Berkeley Way, Berkeley 4 (Montgomery).

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CASE REPORTS

Primary Cancer at Three Sites

GUS T. KERHULAS, *M.D.*, San Francisco

THE PURPOSE of this report is to emphasize the need for further evaluation of the patient already found to have cancer.

As a result of more intensive clinical and pathological investigation, discovery of more than one primary cancer in one person, either at the same time (synchronous) or at a later date in his increasing life-span (metachronous), is occurring more and more often. With increasing longevity, symptomatology assumes a more complex role. Varying complaints may well signify a multiplicity of causes rather than a single one. Primary cancers in various combinations are seen, such as lung-prostate-skin or breast-uterus-bowel, as reported in this case.

In clinical analysis of cases of multiple neoplasms, questions as to whether the lesions are primary or secondary or metastatic add to the complexity of evaluation. Microscopic studies are needed to resolve such problems. "Multiple tumors" may be made up of carcinoma (multiple primaries), metastatic growths, lymphoma, or even leukemia or benign disease.

Complete study is necessary for accuracy in diagnosis and prognosis, and for early and more aggressive therapy where indicated.

In the case here reported, the patient was treated for three primary cancers involving the breast, the uterus and the colon in a period of a year and a half.

REPORT OF A CASE

The patient, a 50-year-old, married, white woman secretary was first observed at age 42 with a cystic lump in the left breast. When aspiration was unsuccessful, biopsy was done and the pathologist reported benign cyst with cystic mastitis. The family history was entirely negative for cancer. Four years later a firm nodule was removed from the opposite breast. The pathologist reported it as showing fibrocystic disease with adenosis.

In the following year a biopsy specimen from the left breast again showed benign cystic disease. The patient was examined quarterly thereafter, and seven years later, in 1957, a biopsy specimen was taken from a lesion 0.2 x 0.3 cm. in the upper outer quadrant of the right breast (Figure 1) and the pathologist reported early mucoid carcinoma. Radical mastectomy was carried out. There was no evidence of regional or distal metastasis. Four months later, upon recurrence of cystic disease of the left breast, simple mastectomy and oophorectomy were advised. However, operation was temporarily deferred. During this period, rectal bleeding developed for the first time, and associated with it were abdominal cramps. Upon sigmoidoscopic examination a malignant neoplasm (Figure 2) was seen 26 cm. from the anus. A

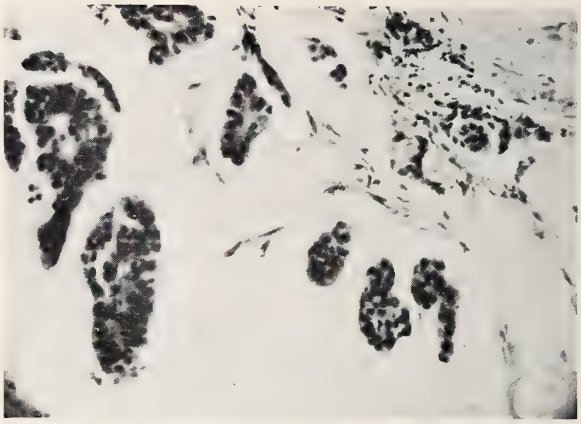

Figure 1.—Specimen from right breast, reported as early mucoid carcinoma. (Reduced from ×450.)

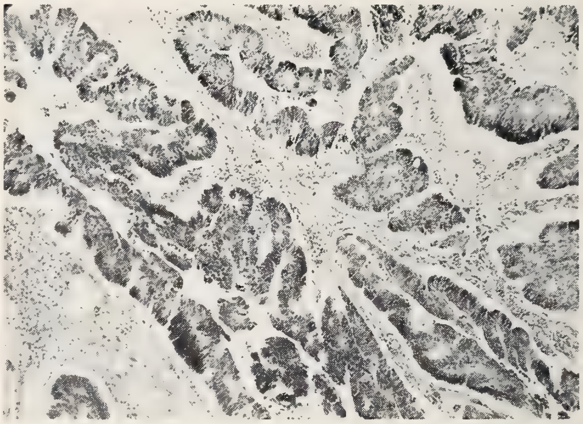

Figure 2.—Specimen from sigmoid colon reported as adenocarcinoma. (Reduced from ×450).

Presented at the Tumor Board Conference, St. Luke's Hospital, San Francisco, October 8, 1958, and January 7, 1959.

Submitted May 24, 1960.

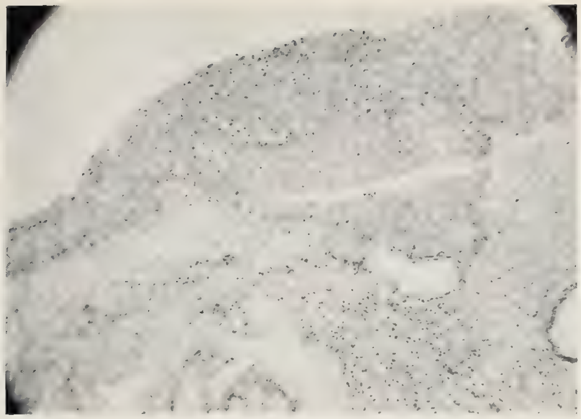

Figure 3.—Biopsy specimen from cervix showing carcinoma in situ. (Reduced from ×450.)

routine pelvic examination was then carried out and the uterine fundus and cervix appeared normal clinically, but results of cytologic examination of secretions from the area were strongly positive for malignant cells. At this time the menstrual cycle was normal. A cervical cone biopsy showed cervical carcinoma in situ. On abdominal exploration there was no clinical evidence of metastasis. No abnormalities were noted in the fundus of the uterus or in the adnexa. There was an annular constricting lesion of the lower sigmoid colon with mucosal ulceration of the tumor and extension to the serosa. No evidence of regional lymph node or distal metastasis was observed. Total hysterectomy and left colectomy were done simultaneously. Follow-up examination with sigmoidoscopy April 21, 1960, showed no evidence of local recurrence. The patient had gained weight and had returned to her previous employment.*

SUMMARY

The patient had primary carcinoma at three sites —breast, colon, uterus—in a period of a year and a half. In the instance of the uterine cancer, cytologic examination showed malignant disease although there was no clinical evidence of it.

No metastasis from any of the lesions was noted.

All three were surgically removed and the patient recovered.

595 Buckingham Way, San Francisco 27.

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*Still being observed at quarterly intervals, the patient was well, without evidence of recurrence, in September of this year.

Lumbosacral Intervertebral Disc Disease in Children

ARNOLD J. MANDELL, M.D., Los Angeles

LUMBOSACRAL INTERVERTEBRAL DISC changes that bring about sciatic nerve disease and other neurological manifestations in the lower extremities is generally thought of as confined almost entirely in persons in the third decade of life or later. In a review of the literature following recent observation of a case seen in a child 12 years old, a number of references were found to its existence as a clinical entity in childhood and adolescence.

REPORT OF A CASE

The patient, a 12-year-old white girl, had always been in good health. She was quite athletically inclined, her activities including daily horseback rides, frequent rounds of golf, hunting trips and regular swimming. Six weeks before admittance to hospital, the patient began to notice a pain in the right buttock and posterior thigh which she characterized as a "deep ache." It was much worse when she straightened her leg. She also noticed some weakness in her foot. The pain and weakness gradually disappeared over the next two weeks even though she continued to be quite active.

Four weeks before admittance, the patient had a two-day episode of malaise, dry cough and a body temperature of 104° F., followed by the eruption of a maculopapular rash over the head, neck and trunk lasting five additional days. This was thought to be measles by a physician who observed her at that time. One week after the rash had disappeared, a more severe pain of the same type in the right posterior thigh, associated with spasm of the hamstring muscles, gradually developed, resulting in a limping gait with a flexed knee. Some pain in the lumbosacral region and weakness in dorsiflexion of the foot was noted. The patient was referred to a local hospital where she was examined by a neurosurgeon and a pediatrician. Physical examination was reported as showing hamstring spasm and weakness, and paravertebral muscle spasm. The results of neurological examination were otherwise negative. Results of blood cell count, urinalysis, spinal tap, sedimentation rate, determination, tuberculin tests, the urinary content of porphyrins and coproporphyrins, studies for lupus erythematosus cells and examination of stool specimens were negative or within normal limits. X-ray studies of the spine and hips showed no abnormalities except for "straightening of the lordotic curvature probably due to muscle spasm" and "slight scoliosis."

From the Neuropsychiatric Institute, U.C.L.A. Medical Center, Los Angeles 24.

Submitted May 19, 1960.

The patient was placed in traction for ten days with no improvement. The day after traction was removed, the Achilles reflex on the right, previously present, was not obtainable. Stool specimens were sent for viral studies. The patient was referred to the Ochsner Foundation Hospital, New Orleans, with suspicion of poliomyelitis or of coxsackie viral damage of anterior horn cells with resulting muscle weakness and spasm. Her condition was to be evaluated with the expectation that she would be sent to a local crippled children's hospital for physiotherapy.

The following abnormalities were noted upon physical examination: (1) Spasm and pain localized to the hamstring muscle group on the right, (2) scoliosis to the left, (3) paravertebral muscle spasm more pronounced on the right, (4) absence of Achilles reflex on the right, (5) hamstring pain accentuated by tapping over the fifth lumbar interspace on the right, (6) extreme pain in the right posterior thigh on raising the straightened leg anteriorly while the patient was supine, (7) slight diminution of pain and of response to light touch in the area of the foot served by the right first sacral nerve.

X-ray examination of the lumbar spine showed scoliosis to the left with slight narrowing of the fifth lumbar interspace. A myelogram done subsequently showed a slight filling defect in the sacroiliac root sleeve on the right. No abnormalities were noted on blood, urine and spinal fluid examination.

On the basis of these observations, a diagnosis of herniated nucleus pulposis of the intervertebral disc was considered.

In light of the possibility of neoplastic disease, the failure of conservative therapy (traction), and the continued progression of symptoms, operative treatment was decided upon. Hemilaminectomy was carried out and a protruding nucleus pulposis of the fifth intervertebral disc was removed. Symptoms immediately disappeared and four months after the operation the child was undertaking moderate exercise with no evidence of residual neurological damage.

DISCUSSION

One of the earliest reported cases of lumbosacral disc syndrome in a child was reported by Pease[7] in 1935. He reported the occurrence of sciatic nerve disease associated with narrowing of the intervertebral disc space in a six-year-old child following a traumatic diagnostic lumbar puncture. Love and Camp[6] reported the case of a 16-year-old boy who had nerve root pain following a fall, with relief by removal of a disc. Bradford and Spurling in their classical monograph in 1941[2] reported the case (Case 11) of a man who had had an episode of lower extremity pain and weakness at the age of 7. Similar pain was relieved several years later by removal of a lumbosacral disc. Alpers and coworkers[1] reported a series of cases of "sciatic neuritis" attributable to disc abnormality, including one case in a 16-year-old boy. A similar case, in a 12-year-old boy was reported by Wahren[9] in the Scandinavian literature. Love,[5] in a review of 1,217 patients operated on for lumbosacral disc disease at the Mayo Clinic from 1939 to 1941, observed that 2.1 per cent were between the ages of 10 and 19 years; no further age grouping for this series is available. Spurling and Gantham[8] added reports of four patients between 16 and 20 years of age in 1949. Key[4] reported on four patients 12, 14, 18 and 19 years of age, who were operated on for herniated disc disease, and on 40 "mild cases" of sciatic nerve disease in children and adolescents that cleared up with conservative therapy. Webb and coworkers,[10] reporting on 6,555 cases in which intervertebral disc operations were done at Mayo Clinic from 1942 to 1953, noted that 60 of the patients were under 18 years of age; the youngest was 12. Ford[3] reported a case of herniated intervertebral disc in a 9-year-old child with typical symptoms. Relief followed removal of the disc.

SUMMARY

Since it is generally thought of as occurring in the third decade of life or later, intervertebral disc disease is rarely considered in children who consult a physician because of symptoms of neurological impairment referrable to the lower extremities. A review of the literature, however, showed that the condition ought to be borne in mind in the differential diagnosis in cases of lower extremity signs and symptoms in children. A case history of a 12-year-old with a herniated nucleus pulposis of the fifth lumbar intervertebral disc illustrates the kinds of diagnostic difficulties that can be encountered.

The Neuropsychiatric Institute, U.C.L.A. Medical Ceenter, Los Angeles 24.

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For information on preparation of manuscript, see advertising page 2

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EDITORIAL

Mental Health in California

Any period of mushrooming population brings with it a wide variety of problems. Citizens of California, which has undergone a tremendous upsurge in population in the past two decades, can well appreciate this fact.

Transportation, water supplies, highways, housing, food supplies and communications have all been taxed to the utmost to meet the demands of the thousands of residents who pour across the state's borders in the continuing migration into California.

In addition to these everyday necessities, the health of the state has constituted an ever-increasing problem. Medical, dental, nursing and other health personnel have expanded sufficiently to provide generally adequate service for the enlarged population but in the field of facilities there has been a lag between demand and construction.

General hospitals have been added to and new ones constructed. Hospital districts have been formed under state laws designed to bring new hospitals into being in areas which have suddenly found a need for them. While there is bound to be a time lag in this area, the hospital facilities of the state have been constantly augmented to meet the growing demand.

In the field of mental health, where the state has of necessity shouldered the greater part of the total burden, the problems of hospital construction and patient care have assumed tremendous importance. As the total population grows and the percentage of that population requiring mental care remains relatively fixed, the number of patients automatically increases. And, where the laws of the state and its subdivisions make it possible and even attractive for individuals and communities to shift the responsibility for mental health services to the state, the problems at state level have grown almost to the point of intolerability.

Fortunately for the State of California and for its citizens and taxpayers, the solutions to these problems have been more than adequately developed.

Governor Brown saw fit two years ago to go outside the boundaries of California for a Director of Mental Hygiene. He chose Doctor Daniel Blain for this post, the first state officer of cabinet rank to come from another state.

Doctor Blain has taken over the largest single department in the state's government. He administers a program which accounts for about $140 million a year in expenditures, employs some 20,000 employees, including 550 physicians, and provides care for about 85,000 patients a year. To house its patients the department maintains 47,000 hospital beds which at any given time are occupied by about 45,000 patients.

This area of responsibility makes the State Department of Mental Hygiene not only the largest department of the state government but also the largest employing unit of the State, with about 20 per cent of all state employees on its payroll.

Where such a large concentration of employment and spending is involved in governmental affairs, the tendency toward bureaucracy is both inherent and tempting. Fortunately, this department of our state government, under the present administration, is heading in the opposite direction. In large part this trend may accurately be attributed to the director.

Daniel Blain comes to California from a background as a psychiatrist in private practice, with experience in administering private psychiatric hospitals. During World War II and for several years afterward he served the federal government in the Public Health Service, the War Shipping Administration and the Veterans Administration. Subsequently he spent ten years as Medical Director of the American Psychiatric Association.

In his present post Doctor Blain brings with him his close working relationship with the private practice of medicine and with medical organizations. His many years in private practice have apparently convinced him of both the responsibility and the capacity of private practitioners in caring for mental patients.

Doctor Blain has been successful in achieving an increased turnover in state hospital bed occupancy, so that the need for building additional large state hospitals has, at least for the time being, been eliminated. He has also instituted an extensive program of in-hospital psychiatric training, to provide through specialized courses a professional background which many of the physicians on the staff had not previously attained.

In addition, an extensive research program, amounting to some $3,000,000 a year, most of it in foundation funds, is now under way.

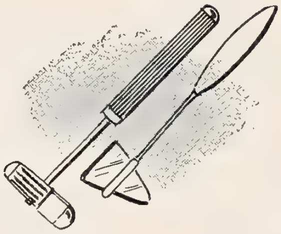
By developing these programs the director has made it possible for a growing percentage of the total mental health program in the state to be handled by private resources and by governmental agencies below the state level. Assisting in this development has been the Short-Doyle program, under which the state contributes a share of the cost of operating mental health facilities on a local or county basis.

Today about 45 per cent of the total mental health care program in California is handled by private resources. Under the program of the state department, every effort is being made to increase that amount to at least half the entire case load. The department feels not only that better care is given the individual patient by the use of home and family environmental resources but also that there must be a limit to the amount of state tax funds which can be applied to mental health at the state level.

Inherent in this program is a sense of responsibility by private physicians and a spirit of cooperation by private physicians and their organizations. The California Medical Association, through the Council, has been quick to embrace the program developed and planned by Doctor Blain. The cooperation of appropriate committees in the Association has been given and assured for the future. The Council itself has welcomed the director at its meetings and has complimented him on his approach to a large problem that affects all Californians.

On another page of this issue is an article by Doctor Blain which gives in detail the plans and the philosophies espoused by him and by his department. This article not only shows the planning for the total mental health problem but indicates the support for this program by the Governor and by the heads of other departments of the state who work closely with the Department of Mental Hygiene.

If the philosophies of this huge mental health program can be continued and if individual physicians and governmental entities below the state level will continue to assume their responsibilities and positions, it is obvious that the needs of the people in the field of mental health will be well met.



California MEDICAL ASSOCIATION

NOTICES & REPORTS

Medical Expert Panels for Malpractice Cases

C.M.A. Liaison Committee with the State Bar of California

The Council of the California Medical Association, at its September, 1957, meeting, and the Board of Governors of the State Bar of California, approved and recommended to county societies the establishment of medical expert panels for the use of plaintiff attorneys in malpractice cases when a county bar association and medical society determined it was in the public interest to do so.

Ground rules and procedures to guide this endeavor were developed by a Joint Liaison Committee of the State Bar and of the C.M.A., and these rules are described in the February, 1958 issue of California Medicine and in the January-February, 1958 issue of the *State Bar Journal*, entitled "Medical Expert Panels for Malpractice Cases."

In essence, leading physicians in general practice and in various medical specialties are selected by a county medical society committee as panelists to make their services available to examine, render a report upon, and, if medically justified, testify on behalf of an aggrieved person where medical malpractice is found to exist. Under the supervision of county medical societies and bar associations, the attorney for an alleged victim may secure the services of such a panelist, who will examine and render a report with his opinion as to whether medical malpractice exists, for a reasonable charge. Should the cause proceed to trial, the panelist may, at the election of the aggrieved party, testify as to his examination and findings, again for a reasonable fee. Should his services not be desired, the report is privileged and may not be examined, nor may the physician be called to testify at the defendant's request. Provision is made for a second panelist from another medical field to examine, should the first panelist deem it necessary. A second panelist in the same field may also be called at the request of the injured party, but if this is done, a waiver of privilege as to the first examination must be given.

This program was designed to fill the vacuum created by the frequent refusal of one physician to testify against another, and the professional stigma that attached to him when he did. It is to the credit of the medical profession, prompted by a spirit of fairness and the desire to fulfill a public need, that they inspired the proposal for the creation of the panel system.

The Liaison Committees of the two State associations have continued to study the development of this unique program.

OPERATION OF THE PANEL SYSTEM

At the present time the panel system is in operation in three counties: Los Angeles, San Francisco and San Diego. Its operation is imminent in Alameda County and is being considered in some of the smaller counties or councilor districts throughout the state. Since its inception, the panel has been used sixty times in Los Angeles, fifteen in San Francisco, and twelve in San Diego. The joint committees determined that by the time of their second meeting in April, a sufficient experience would have been had in Los Angeles to justify submission of a questionnaire to medical panelists and to the plaintiff attorneys who had sought their services, in specific cases involving medical malpractice. Accordingly, a questionnaire was drafted by the two groups and submitted to the doctor and lawyer involved in each of twenty-nine cases.

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Report of the C.M.A. Liaison Committee with the State Bar of California, July 11, 1960.

The questionnaire submitted to the doctor included the name of the lawyer requesting consultation, name of patient; nature of complaint or injury, cooperation of the lawyer, whether the report was of assistance to the attorney's appraisal of the case; whether the matter proceeded to trial and if so, whether the panelist was used as a witness, whether the matter was settled or compromised or otherwise disposed of, and whether the panel system was considered to be of value and should be continued. A similar questionnaire was submitted to the attorney requesting the examination. He was additionally asked to appraise the cooperation of the panel member, the apparent objectiveness and fairness of his report, whether it was of assistance in appraising the case, whether the matter proceeded to trial, whether the panelist was used as a witness; whether the panelist's report was of value in effecting settlement if the case was settled, or whether the case was otherwise disposed of. He too was asked whether the panel system was of value in his opinion and should be continued.

Of the twenty-nine such cases surveyed, twenty-eight doctors and twenty-five lawyers replied. All physician-panelists gave their unqualified approval as did all of the attorneys except four who expressed some doubts about its usefulness. In at least two cases, the panelist testified in court on behalf of the plaintiff. In one of these instances, the jury found for the defendant despite the panelist's contrary opinion. In several other instances the report and findings were instrumental in securing a settlement in a substantial amount; in other instances it resulted in the case being declined. Some of the comments on the panel system made by the attorneys and physicians familiar with it serve to illustrate their appraisal of its usefulness:

(a) A partnership of attorneys said of the physician-panelist: "His report was not only complete and thorough, but I considered it extremely objective and very fair and honest. . . .

"Although our experience is limited to this one use of the panel, I can say, unequivocally, that [my partners] and I are heartily in favor of its continuance."

(b) A firm of attorneys reported: "Within the past four to six month period, this office has sought medical advice from panel members in regard to malpractice litigation a good half dozen times. We have used panel members as expert witnesses in two malpractice trials within the past month. . . .

"The undersigned has complete unhesitancy in going on record, publicly or otherwise, in wholehearted support of the panel system. . . .

"In short, the undersigned is of the unqualified opinion that the panel system should be continued. It is a giant step in bringing a strong, impersonal light to bear on the facts of a given situation, and in only this way are the ends of justice served to all parties."

In answer to the question: "Do you feel this panel system to be of value and that it should be continued?" most of the attorneys gave such answers as: "Yes," "Decidedly, yes," "Absolutely," "Yes—with modifications," "I found it most helpful," and one "No."

The physician-panelists were asked the same questions and they gave answers such as the following:

"I do feel that the panel system is of value and it should be continued," "Yes, the panel system is valuable," "Believe this panel system to be of great value far and beyond what one would ordinarily expect it to be. If continued judiciously and intelligently, it will cut down malpractice cases by a large percentage," "I think that the system is absolutely necessary for the protection of the medical profession against charges leveled that doctors will not testify against each other even in genuine cases of malpractice," "I believe the panel system is of considerable value in averting the filing of unjustified malpractice actions." One panelist testified for the plaintiff in a case in which the jury returned a verdict for the defendant-physician.

One physician-defendant learned of the survey and took occasion to write as follows:

"I would like to take this opportunity to express my appreciation for the assistance rendered the undersigned in preventing a malpractice lawsuit initiated by ——————. I would especially like to thank Dr. —————— for his time and careful study of the case."

Based on the information set forth on the questionnaire returned, the results of the twenty-nine cases in which the panel was used, can be summarized as follows:

Six (6) cases—results unknown;
Ten (10) cases—final result still pending;
Six (6) cases—decided in favor of physician-defendant;
Seven (7) cases—settled.

The members of both Liaison Committees conclude that a breakthrough has been achieved in securing voluntary physician testimony in meritorious cases and that continued existence of the present program will not only result in an improvement in this segment of the administration of justice, but will go far to improve the relationship between the two professions with each other and with the public.

Respectfully submitted,
LIAISON COMMITTEE WITH THE STATE BAR
FRANCIS E. WEST, M.D., *Chairman*
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PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

THE DEPARTMENT has published, in booklet form, standards and recommendations for public prenatal care. The standards were developed as an outgrowth of a 1955-56 study which showed serious deficiencies in quality and quantity of prenatal care. Then, as now, maternal and neonatal mortality was higher in public institutions than in private institutions.

The department's Advisory Committee on Maternal and Child Health urged that standards be developed as a means of improving the care given in public institutions.

While these standards and recommendations are offered as a guide to professional health workers responsible for providing prenatal care services, they may also be helpful to physicians in private practice and to staff of non-tax supported prenatal care facilities.

The standards were reviewed by the Committee on Health Services of the California Conference of Local Health Officers, the Committee on Maternal and Child Care of the California Medical Association, and the Council of County Hospitals of the California Hospital Association.

Copies of the standards can be obtained from local health departments and all county hospitals with maternity services.

* * *

State and federal matching funds totalling more than $16½ million were allocated in October by the department's Advisory Hospital Council for the construction of 24 hospital and health facilities projects. The state-federal funds represent two-thirds of project financing, with the remaining one-third provided by the local community.

The funds were allocated to the following projects (the amounts represent total state-federal funds):

General Hospitals: Needles Municipal Hospital, $145,200; Roseville District Hospital, $1,050,000; Lake Tahoe Community Hospital, $598,010; Palo Verde Hospital, Blythe, $520,000; Barstow Community Hospital, $206,570; Victor Valley Lutheran Hospital, Victorville, $829,288; St. Joseph Hospital, Santa Ana, $4,114,600; San Antonio Community Hospital, Upland, $2,500,400; Seaside Hospital, Crescent City $498,882, and Trinity General Hospital, Weaverville $230,476.

Psychiatric: San Antonio Community Hospital, $80,000; Glendale Sanitarium and Hospital, $671,780, and Vista Hill Psychiatric Foundation, San Diego, $856,422.

Health Centers: Butte County Health Department, Chico, $151,270; Sacramento County Hospital, $630,948; Los Angeles City Health Department, South District, $100,200; San Joaquin Local Health District, Stockton, $379,244, and San Francisco City and County Health Department, Eureka-Noe District, $124,380.

Long Term Care: Rancho Los Amigos, $1,242,080, and Holy Cross Hospital, San Fernando, $335,568.

Diagnostic and Treatment Centers: Santa Clara County Hospital, San Jose, $501,760, and Children's Hospital of the East Bay, Oakland, $47,132.

Rehabilitation: Los Angeles County General Hospital, $705,934, and Rehabilitation and Research Center of Crippled Children's Society of San Mateo County, Burlingame, $117,104.

* * *

The number of births registered in California the first eight months of this year indicates that California's birth rate will be about the same as in 1959. If this trend continues, California will have 372,000 births in 1960, an increase of 14,000 over last year, and the birth rate will be 23.5 per thousand, same as in 1959.

This trend is different from that of the rest of the country, since the National Office of Vital Statistics has reported a current decline in the total number of babies born in the United States for the first half of 1960.

The death rate in California will increase slightly in 1960, largely because of the relatively high level of mortality from the pneumonia and influenza outbreak which occurred during January and February.

Barring any unusual increases in the last quarter, California will have approximately 136,000 deaths this year, and the crude death rate will be 8.6 per thousand, about 2 per cent higher than 1959.

WOMAN'S AUXILIARY
TO THE CALIFORNIA MEDICAL ASSOCIATION

Fall Conference

One of the most stimulating and rewarding personal experiences to me, was the recently conducted fall conference of the Woman's Auxiliary to the California Medical Association at the Disneyland Hotel on September 23 to 26. This conference was conducted for county presidents, county presidents-elect, county chairmen, county chairmen-elect and state committee chairmen. The format was that of a workshop. The purpose of the fall conference was to teach and be taught; to exchange ideas so that we may become better leaders in our auxiliary and our communities; and to formulate plans for the current year. The conference lasted three days and was crowded with activities, which, I hope, proved beneficial and profitable to those attending.

Since most of the doctors' wives—and certainly the doctors (with but a few exceptions) could not be in attendance, a review of the activities might be of value, and also serve to remind the doctors that conferences can be conducted with dispatch and efficiency.

A highlight of the agenda on the first evening's program was a talk by Mrs. William Mackersie, president of the Auxiliary to the American Medical Association. It was certainly a privilege and a pleasure to have her with us. Mrs. Mackersie, an active auxiliary worker for some twenty-seven years, made us aware of auxiliary and its potential. Her concentrated message was most stimulating, for she outlined the plans and hopes she is fostering to stimulate our activities and interests.

The Membership Panel, moderated by the membership chairman, Mrs. Floyd K. Anderson, consisted of four county presidents representing counties of varying membership. Since the ultimate goal of the auxiliary is to have every eligible wife a member, many and varied methods of interesting doctors' wives to become active and interested in auxiliary were presented and ideas exchanged. Methods of obtaining new members, regaining resigned members and stimulating the interest and active participation of former inactive members were outlined in the panel discussion.

The Panel for Woman's Auxiliary-Students American Medical Association, consisted of a medical student and three medical students' wives. It was conducted by Mrs. Matthew Hosmer, the state chairman. Although this committee was formed only this year, its activities were most enlightening to the many county presidents who were unfamiliar with it.

A most informative panel was that on Health Careers. The State Health Career chairman, Mrs. Leonard Offield, was moderator and two county presidents participated as panelists. The Health Career Conference, which I recently covered in one of my articles, was presented in detail, much to the delight of the many interested counties. Information on nurse recruitment, future nurses clubs and the other allied fields of medicine was outlined in detail. This committee remains a very popular and important one since it represents one of our key projects.

The state chairman of Physicians' Benevolence Committee, Mrs. Milton Schatz, presented an excellent résumé of this important committee's work. She explained the background and the need for such a fund. The desire of the C.M.A. to care for their own and the hope for continuing support from the counties were emphasized. The chairman explained the financial aspects of this program and emphasized the importance of financial support.

The panel on Community Service, formerly called Public Relations, was moderated by the state chairman, Mrs. Angus McDonald, with four county presidents serving as panelists. Importance of this committee is demonstrated by the fact that it has a close relationship with all of the other committees. Since the committee serves within the boundaries of all communities, it needs the cooperation of the Community Service Committee. Each panelist presented the "unusual" that she does in her own community. Amongst the "unusual" was San Francisco's "Meals on Wheels" project, which interested small and large counties alike.

The panel on Problems of the Aging, with Mrs. Theodore Poska as chairman, was a most informative one. It was of particular interest to the county presidents, for it fulfilled their desire to not only assist the C.M.A. in this program, but to encompass as much information as possible. Only by this means can we relay to the public correct and precise information.

The Civil Defense Committee presented its important message in the form of a skit—depicting the necessities of being well prepared. Home Preparedness was the title of this most informative skit. Mrs. Fenimore Davis, state chairman, was the moderator, and three county presidents were the participants.

The GEMS (good emergency mother substitutes) panel was moderated by the state chairman, Mrs. Hugh McVeigh, with four county presidents participating. There was an excellent exchange of ideas for the training of good emergency mother substitutes. This program is growing rapidly in popularity with teen-agers and other organizations.

Another informative panel was one on the American Medical Education Foundation. This committee we hold high amongst our projects. The state chairman, Mrs. John Lagen, had as her panelists the presidents of three of our counties who had raised monies in unusual ways. There was a brisk exchange of ideas which proved beneficial to all. Following this panel there was a presentation of awards to the county that contributed most money to A.M.E.F., to the county that contributed the most per capita and to the county that presented the most novel idea.

The Safety Committee presented a novel program, using a hat show to emphasize Home Safety. The eleven models that participated were county presidents and presidents-elect. Each model wore a hat trimmed with various hazards to safety encountered in the home. The appropriate script for each was read by the state Safety Committee chairman, Mrs. Charles Jobbins.

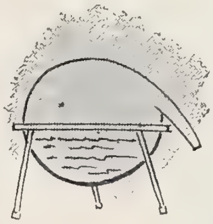
The State Program chairman, Mrs. Albert Miller, divided the counties into two categories—those counties with a membership of over 100, and those with membership of under 100. Discussions were held with each group. Since a good program stimulates the interest and enthusiasm of the membership, which in turn engenders an increase in membership, this was an effective means of informing the county presidents.

We felt most flattered, and honored, indeed, that the C.M.A. Advisory Board gave of their valuable time to participate in the fall conference. This was the highlight of the three-day session. Dr. Paul Foster, president of the C.M.A., spoke to us on "Governor's Committee for Medical Care Needs in California." Dr. Samuel Sherman, chairman of the C.M.A. Council, enlightened us on "Recent Council Action of Dramatic Nature." Dr. Warren Bostick, president-elect of the C.M.A., informed us with regard to "Medical Care for the Elderly." Dr. Malcolm Todd, a member of the Council, having returned that very morning after accompanying Mr. Nixon on one of his campaign tours, brought us the "last minute" news regarding our Vice-President, and spoke on "Accelerated Public Relations Program of the C.M.A. and How Can the Auxiliary Join Forces on a Partnership Basis to Implement this Program." Mr. Howard Hassard, executive director, C.M.A., presented vital information on "The Legislative Side of Our Problem." The women were most enthusiastic with this excellent panel, for it gave us valuable and important information. I wish to express my appreciative and grateful thanks to them, for a stimulating and most worthwhile program.

I am grateful, also, to the moderators, panelists and speakers of this conference, who I felt, brought a wealth of information, wisdom, and food for thought. I am sure that much good will accrue to those who attended.

This conference could not have been possible or successful, without the capable and efficient cooperation of the fall conference chairman, Mrs. Bernard Mason of Huntington Beach, and her diligent and conscientious committee women, Mrs. G. Emmett Raitt, Mrs. J. B. Price, Mrs. Lewis Ellmore, Mrs. Van Kaye and Mrs. John Montanus. My grateful and appreciative thanks goes to each of them.

MRS. SAMUEL GENDEL,
President, Woman's Auxiliary to the California Medical Association



EVALUATION OF INDUSTRIAL DISABILITY

Through the efforts of the California Medical Association's Subcommittee for Standardization of Joint Measurement, the book titled *Evaluation of Industrial Disability*, which was written by the committee and published by Oxford University Press in 1950, has been revised and the second edition is now available.

The following material covers the changes that have been made in the second edition (the page numbers refer to the pages in the first edition):

Girth of the forearm is to be taken normally only at the point of maximum circumference. Page 18.

Finger Abduction has also been termed "Spread of Fingers" as an additional term. Page 48.

Thigh Girth will be taken only at a point one-third of the distance up from the upper patella to the umbilicus under normal circumstances. (Delete illustration 62B, Page 69.)

Calf Girth will normally only be taken at the point of maximum circumference. Page 70.

Measurements of Toe Motion will be taken on a passive basis (due to many patients having difficulty in demonstrating active toe motions). Pages 84-87.

Definitions of Subjective Disability adopted by the California Industrial Accident Commission on June 26, 1956, have been added to the text. This information is printed on Page 2 of the Official Minimum Medical Fee Schedule of the Industrial Accident Commission under paragraph 13.

The price of the second edition is $1.25. Copies may be obtained from your book dealer or from Oxford University Press, Inc., 417 Fifth Avenue, New York 16.

Added to the new edition is a section titled Estimated Average Normals as follows:

ESTIMATED AVERAGE NORMALS

These average normals given below are to be used only as a guide in cases of bilateral injuries or pre-existing disabilities; and whenever used, the individual characteristics of the patient under consideration must be used to modify these figures, e.g. age, stature, weight, range of motion of other body joints, etc.

SHOULDER

Extension	30
Abduction	170
Flexion	170
Internal rotation	60
External rotation	80

ELBOW

Extension	180
Flexion	135

FOREARM

Supination	85
Pronation	75

WRIST

Dorsiflexion	65
Palmar flexion	70
Ulnar deviation	40
Radial deviation	20

THUMB

Abduction	55
Tip misses 5th metacarpal head	0

HAND

	PROX.	MID.	DIST.
Thumb			
Ext.	175	***	200
Flex.	50	***	75
Index			
Ext.	180	180	180
Flex.	85	100	70
Middle			
Ext.	180	180	180
Flex.	90	100	70
Ring			
Ext.	180	180	180
Flex.	90	100	70
Little			
Ext.	180	180	180
Flex.	90	100	70

HIP

Flexion	110
Extension	30
Internal rotation	35
External rotation	50
Abduction	50
Adduction	30

KNEE

Extension	180
Flexion	135

ANKLE

Dorsiflexion	15
Plantar flexion	50
Eversion	20
Inversion	35

GREAT TOE PROXIMAL JOINT

Extension	40
Flexion	25

NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

The American Public Health Association last month bestowed the **Albert Lasker Award** upon the Chronic Disease Control Program of the California Department of Public Health and upon the chief of that division of the department, **Dr. Lester Breslow.** The award was made for a program, begun 15 years ago, which has become widely celebrated for major studies in the prevention and control of chronic disease throughout the state.

* * *

Dr. Joseph Sadusk, Jr., Piedmont, was elected president-elect of the California Society of Internal Medicine at its annual meeting, which was held in Yosemite National Park in September. **Dr. A. Lee Edgar** of La Mesa was installed as president.

LOS ANGELES

Dr. Forrest E. Leffingwell, Pasadena, was elected president-elect of the American Society of Anesthesiologists at the annual meeting of the society in New York last month. **Dr. Douglass H. Batten,** San Diego, was elected first vice-president and **Dr. James L. Rhee,** Oakland, vice-speaker of the house of delegates.

The New York City meeting was reported one of the best attended in the organization's history, with more than 2,100 registered from the United States and 200 from foreign countries.

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The thirteenth annual **Midwinter Radiological Conference,** sponsored by the Los Angeles Radiological Society, will be held at the Biltmore Hotel, Los Angeles, California, on Saturday and Sunday, January 28 and 29, 1961.

An outstanding program of pertinent interest has been arranged, the announcement said, and the guest speakers will be Dr. James W. D. Bull, London, Dr. John Boland, New York, Dr. John A. Kirkpatrick, Philadelphia, and Dr. John F. Holt, Ann Arbor.

SANTA CLARA

Dr. Burt L. Davis of Palo Alto was elected president-elect of the California Academy of General Practice at the annual convention of the organization in San Francisco in October.

Dr. Ralph L. Bennett of Los Angeles was named speaker of the Academy's governing body.

SAN FRANCISCO

Dr. John W. Cline was installed as president of the American Cancer Society at the society's annual meeting in New York in October.

Dr. Cline, a successful champion of legislation against cancer quackery in California, is a past president of the California division of the Cancer Society, of the California Medical Association, and of the American Medical Association.

At the meeting, Mrs. Roger Goodan of Los Angeles, who was reelected vice-president of the organization, presented a check of $364,000 for cancer research as a contribution from the California Division.

* * *

Mrs. Lillie Woods of San Francisco was elected president-elect of the **American Association of Medical Assistants** at the recent annual meeting in Dallas, and more than 400 women employed as nurses, medical secretaries and medical assistants in physicians' offices throughout the country attended the organization's three-day educational program and business sessions.

SHASTA-TRINITY

The new officers of the Shasta-Trinity County Medical Society, named at the annual meeting last month, are: President, Dr. Robert E. Breeden, Weaverville; vice-president, Dr. George A. Martin, Redding, and secretary-treasurer, Dr. Vernon R. Gee.

GENERAL

A symposium on clinical nutrition will be held in Washington, D. C., November 30, 1960. Sponsored by the Council on Foods and Nutrition of the American Medical Association in cooperation with the Medical Society of the District of Columbia, the meeting will be opened to all interested persons.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Proctology—Lecture and Surgery Demonstration. Wednesday, November 30. Nine hours. Fee: $40.00 for full course; $25.00 for noon and evening courses.

Treatment of Selective Hematologic Disorders. Saturday, December 10. Eight and one-half hours. Fee: $25.00 (includes lunch).

Below-Knee Prosthetics. Monday through Friday, December 12 through 16. Enrollment limited to 20. Fee: $125.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 7 through 22. Twenty-four hours. Fee: $125.00.

Bedside Clinics (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: $50.00.

An Evaluation of Librium. Saturday, January 14. Eight hours. Fee: $2.50.

Below-Knee Prosthetics. Monday through Friday, January 23 through 27. Enrollment limited to 20. Fee: $125.00.

Office Surgery. Saturday and Sunday, February 18 and 19. Twelve hours. Fee: $40.00.

Fractures (Lecture and Dissection). Friday through Sunday, February 24 through 26. Eighteen hours.*

Retinal Surgery. Thursday and Friday, March 2 and 3. Twelve hours.*

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $15.00 (includes one lunch and one dinner).

A Symposium on Pain. Friday, Saturday and Sunday, April 7, 8 and 9. Twelve hours. Fee: $50.00.

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through May 15. Thirty-two hours. Fee: $200.00.

Low Back Pain. Friday and Saturday, May 12 and 13. Twelve hours. Fee: $50.00.

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Advanced Seminars in Internal Medicine. Sunday through Wednesday, July 9 through 12. University Conference Center, Lake Arrowhead. Eighteen hours. Fee: $137.50 (includes room and meals).

Dermatology in Clinical Practice. Monday and Tuesday, July 10 and 11. Twelve hours.*

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Retinal Detachment Surgery. Thursday through Saturday, December 1 through 3. Twenty-one hours. Fee: $50.00.

The Hip. Friday through Sunday, December 9 through 11. Twenty-one hours. Fee: $50.00.

Vectorcardiography. Saturday, December 17. Seven hours. Fee: $20.00.

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Man and Civilization: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours. Fee: $25.00.

A Course in Pediatrics. Saturday through Monday, February 11 through 13. Twenty-one hours.*

Medicine for General Practitioners. Mount Zion Hospital. Monday through Friday, February 20 through 24. Thirty-five hours.*

Pediatric Neurology. Thursday through Saturday, March 2 through 4. Twenty-one hours.*

Urology. Thursday through Saturday, March 9 through 11. Twenty-one hours.*

Symposium on Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

What's New in Urology. Sunday, December 11. Eight hours. Fee: $25.00.

Hematology and Cancer Chemotherapy. Saturday, January 7. Eight hours. Fee: $25.00.

Common Problems in Pediatrics. Sunday, January 29. Eight hours. Fee: $25.00.

Dermatologic Therapy. Saturday, February 11. Eight hours. Fee: $25.00.

Diabetes and Thyroid Disease: Current Methods in Diagnosis and Treatment. Saturday, February 25. Eight hours. Fee: $25.00.

The Four R's of Fractures: Recognition, Reduction, Retention, Rehabilitation. Saturday, March 11. Eight hours. Fee: $25.00.

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Note:

Each one of 10 conferences listed above	$ 25.00
The complete series of 10 conferences	150.00
A series of any 5 conferences	100.00

Operable Heart Disease. Friday and Saturday, March 3 and 4.

Conference on Keratoplasty. Wednesday through Friday, March 8 through 10.

General Review Course for Practicing Physicians. Thursday through Saturday. March 16 through 18.

Conference on Strabismus. Wednesday through Friday. July 12 through 14.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

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*Fee to be announced.

†Hours and fees to be announced.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Recent Advances in Medicine. Thursday and Friday, November 17 and 18. Huntington-Sheraton Hotel, Pasadena. Fee: $25.00.

Nuclear Medicine:
Part I, January. Fee: $50.00.
Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Clinical Hematology. Saturday and Sunday, February 25 and 26.*

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Thorax, Abdomen, Pelvis. Monday and Wednesday, January 4 through April 12. 121 hours. Fee: $125.00.

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Thorax, Abdomen, Pelvis. Wednesdays, January 4 through April 12. Twenty-eight hours. Fee: $50.00.

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 13 and 14, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. Audio-Digest Internal Medicine will shortly be available on long-play discs, requiring only a 33 1/3 rpm phonograph to utilize the service. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

NOVEMBER MEETINGS

AMERICAN COLLEGE OF PHYSICIANS Southern California Regional Annual Basic Science Lectureship. November 18, California Club, Los Angeles. Dinner and cocktails, 6:30 p.m. Speaker: Melvin Calvin, Ph.D., professor of chemistry, University of California, Berkeley. Subject: "Origins of Life." Members and invited guests. *Contact:* George C. Griffith, M.D., governor ACP, P.O. Box 25, 1200 N. State Street, Los Angeles 33. CApitol 5-3131, Ext. 7-1543.

SOUTHERN CALIFORNIA SOCIETY OF GASTROENTEROLOGY Panel Discussion "Enzymology and G.I. Diagnosis." November 22. Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

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* Fee to be announced.

DECEMBER MEETINGS

California Chapter, American College of Chest Physicians. December 1 through 3. Palm Springs. *Contact:* S. J. Sills, M.D., President, 2007 Wilshire Blvd., Los Angeles.

Scripps Clinic and Research Foundation, electrocardiography, phonocardiography and vectorcardiography. December 8 through 10, 9 to 5 daily. Scripps Clinic and Research Foundation, La Jolla. *Contact:* E. Grey Dimond, M.D., Scripps Clinic and Research Foundation, La Jolla.

JANUARY MEETINGS

Los Angeles County Heart Association Mid-Winter Symposium. January 11. Statler Hilton Hotel. *Contact:* LACHA, 2405 W. 8th Street, Los Angeles.

Long Beach Heart, Cancer and TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 12:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

Thirtieth Annual Mid-Winter Convention in Ophthalmology and Otolaryngology. January 23 to 27. Statler-Hilton Hotel, Los Angeles. *Contact:* Norman Jesberg, M.D., treasurer, 500 South Lucas, Los Angeles 17.

Western Society for Clinical Research. January 26 through 28. Carmel-by-the-Sea, Calif. *Contact:* William N. Valentine, M.D., secretary-treasurer, UCLA School of Medicine, Los Angeles 24.

Fresno County Heart Association Ninth Annual Central California Cardiovascular Symposium. January 27. 8:30 a.m. to 5:30 p.m. Fresno Elks Club, 5080 E. Kings Canyon Road, Fresno. *Contact:* Jack J. Jacobson, M.D., chairman, Professional Services Committee, 1584 N. Van Ness Ave., Fresno.

FEBRUARY MEETINGS

American College of Physicians Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. Abstracts (300 words) of papers for consideration of presentation at the meeting should be sent in triplicate before November 1 to Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

Institute for Metabolic Research "Lipid Metabolism in Diabetes and Related Conditions" two-day round table symposium. February 7 and 8. Highland-Alameda County Hospital, Oakland. *Contact:* L. W. Kinsell, M.D., director, Institute for Metabolic Research, 2701 14th Ave., Oakland.

West Contra Costa Branch of California Academy of General Practice Evening Lectures in Medicine by University of California Medical School Faculty. Thursdays, February 9 through March 16. Richmond. *Contact:* D. D. Vollan, M.D., chairman, Education Committee, 184 24th St., Richmond.

Obstetrical and Gynecological Assembly of Southern California, 16th Annual Mid-Winter Clinical Assembly. Ambassador Hotel, Los Angeles, February 13 through 17. *Contact:* Dee Davis, executive secretary, 5478 Wilshire Blvd., Los Angeles 36, WEbster 4-1551.

Los Angeles Society of Neurology and Psychiatry in cooperation with California Spinal Cord Research Foundation, Conference "Recent Contributions of Basic Research to Paraplegia." February 17 and 18. Los Angeles. *Contact:* Robert P. Sedgwick, M.D., secretary-treasurer, 2010 Wilshire Blvd., Los Angeles 57.

California Tuberculosis and Health Association, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

Southern California Society of Gastroenterology. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

MARCH MEETINGS

Southwestern Pediatric Society Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting. March 11 and 12. Statler Hilton Hotel, Los Angeles. *Contact:* Thomas W. McIntosh, M.D., 686 East Union Street, Pasadena.

College of Medical Evangelists Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

SPRING AND SUMMER MEETINGS

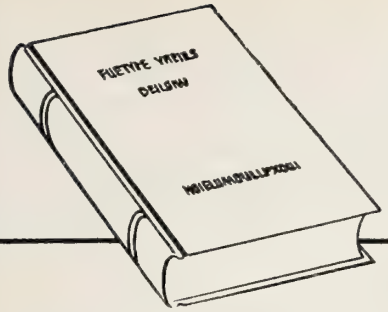
Industrial Medical Association. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

California Medical Association Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

Medical Staff of Children's Hospital of the East Bay Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

Memorial Hospital of Long Beach, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

Western Branch, American Public Health Association Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.



THE PHYSICIAN'S *Bookshelf*

POSTURAL FITNESS—Significance and Variances—Charles LeRoy Lowman, M.D., Sc.D., F.A.C.S., Chief of Staff Orthopedic Hospital, Emeritus; Director School, Physical Therapy, University of Southern California; and Carl Haven Young, Ed.D., C.C.T., F.A.A.P.M.R., Professor of Physical Education, University of California, Los Angeles. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 341 pages, 61 illustrations, $7.50.

The authors draw on a wealth of experience in reconstructive orthopaedic surgery, rehabilitation, and physical education to formulate this very complete and most readable work on posture. They have been able to give the reader an understanding of the basic elements of posture: (1) The significance of each body part; (2) the normal posture and variations from the normal; (3) means of recovery from abnormal posture or postural defects; (4) the description of man's posture in all stages as it develops from infancy to maturity.

The surprisingly high percentage of individuals making up the normal population where postural defects are found is emphasized. The contributing muscular deficiencies in faulty posture are thoroughly explained. Possible means of overcoming these muscular deficiencies are outlined.

These individuals naturally look to the physicians for help in regulating their posture. The authors emphasize that exercises must be far more specific than sports and games for recreation if posture is to be improved. It is then pointed out that resulting improvement in posture may result in improvement in some of the body organ systems such as the respiratory system and the digestive system.

The book will serve as an excellent text for students majoring in physical education, teachers in the area in corrective or adaptive physical education, and for those working in clinical situations, such as physicians, therapists, and nurses. Definite sets of exercises described in complete detail are outlined for various postural deficiencies. Outlines for various types of fitness programs are given.

This text is the result of a complete analysis and treatment of the subject. It is all-inclusive and it is most difficult to think of any pertinent aspect of posture omitted.

J. R. Close, M.D.

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ELECTROCARDIOGRAPHIC TECHNIQUES—A Manual for Physicians, Nurses and Technicians, Second Revised and Enlarged Edition—Kurt Schnitzer, M.D. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 109 pages, $4.75.

This is the second edition of a practical manual on the technique of electrocardiography for technicians and nurses. It is an excellent, easily read book which in the reviewer's opinion is the best available for the beginning technician. It begins with a short, simple account of the circulation and a description of the conduction system of the heart. The electrocardiographic instrument is clearly described and there are good accounts of such things as standardization, lead selectors, electrodes, stylus, etc. A particularly good account concerns the artifacts which interfere with the proper record and ways in which the technician can recognize them. The actual recording of the electrocardiogram is clearly described and illustrated. There is a short account of exercise tests and vectorcardiography as well as a short bibliography.

This book can be highly recommended as a clear, concise introduction to electrocardiograph technique and will be of special value to the new technician.

Maurice Sokolow, M.D.

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ANOREXIA NERVOSA—Its History, Psychology, and Biology—A Psychosomatic Medicine Monograph—Eugene L. Bliss, M.D., Associate Professor of Psychiatry, University of Utah College of Medicine; and C. H. Hardin Branch, M.D., Professor and Head of the Department of Psychiatry, University of Utah College of Medicine. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 210 pages, $5.50.

This book is built upon an intelligent appraisal of twenty-two patients with anorexia nervosa. Stimulated by their own rich experiences the authors have carefully analyzed and beautifully and clearly reported accounts bearing upon anorexia nervosa from ancient to modern times. There follows a well-organized description of the clinical aspects of anorexia nervosa, including the helpful, common, and unusual features of physical examination, psychodynamic aspects, laboratory and endocrine findings, and treatment. Finally the case reports themselves are excellent illustrations, and the bibliography is extensive.

This book is highly recommended for physicians and students alike, and can be used with great profit to study anorexia per se, for specific reference to look up points of interest in connection with a patient or a research problem, and as a model for the presentation of an intriguing medical problem.

Sherman M. Mellinkoff, M.D.

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NUMERICAL PROPERTIES OF FUNCTIONS OF MORE THAN ONE INDEPENDENT VARIABLE—Annals of The New York Academy of Sciences, Volume 86, Art. 3; Pages 677-874. Published by The New York Academy of Sciences, 2 East Sixty-third Street, New York 21, New York, 1960. 197 pages, $3.00.

This monograph is of interest to graduate mathematicians with a specialized interest in computations and numerical analysis. It contains several papers giving new results in domains of mathematics which are of growing practical importance as a result of the increasing applicability of electronic computers.

Lincoln E. Moses, Ph.D.

NINE MONTHS' READING—A Medical Guide for Pregnant Women—Robert E. Hall, M.D. Illustrated by Robert Demarest. Doubleday & Company, Inc., Garden City, New York, 1960. 191 pages, $2.95.

"Nine Months' Reading" is a superb book which provides approximately four hours of interesting and informative reading. In 186 pages Dr. Hall has compiled an all-encompassing survey of the adventures of the pregnant woman and her intra-uterine citizen. In a lucid and nonflowery style, this book contains an intelligent answer to almost every conceivable question the most querulous "primipara" could ask. Particular attention has been devoted to an understandable explanation of the Rh problem, and to a frank and thorough description of labor and delivery. In his discussion of the various aspects of pregnancy and birth the author salts his information liberally with his own opinions which are authoritative and not in the least vacillatory: "But if you want to scream, go ahead. You won't be the first or the last or the loudest."

Two subjects in particular are obviously dear to Dr. Hall's heart: for 18 pages he ardently expounds his views on breast feeding, "it radiates love," and natural childbirth, "jungle obstetrics." There is no brain washing attempted, simply an articulate and pungent expression of his opinions.

The contemporary aspects of 1960 obstetrics are covered accurately, for the most part, from an explanation of prenatal sex determination by study of the amniotic fluid cells to advice on the levels of radioactive strontium 90 in milk. One exception is the description of the chromosomal number as twenty-four pair, instead of the correct figure of twenty-three pair.

Dogmatic statements abound in this book but only rarely do they provoke skepticism as to their factual basis, viz., "gamma globulin is useless in preventing German measles." Dr. Hall's authoritative manner even extends to an admonishment to parents, "Don't give the baby a family name," with a paragraph explaining the psychiatric reasons for his philosophy.

In the opening paragraph of the final chapter, the author counsels his pregnant patients that the moment of returning home from the hospital with the new born is an exalting and triumphant one, so, "Don't mess it up." Following this imperious advice, there is an excellent section crammed with the same common-sense with which the book is saturated.

A very helpful glossary is provided and an adequate index.

A dozen barely adequate illustrations with substandard descriptions do not add to the effectiveness of the text.

The book costs three dollars, and it is hard to imagine a better investment for any pair of prospective parents and their obstetrician.

John V. Kelly, M.D.

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PARDON MY SNEEZE—2nd Edition—The Story of Allergy—Milton Millman, M.D., Fellow American College of Allergists; Member American Academy of Allergy; and Past President San Diego Biomedical Research Institute. Kuchirka Books, P.O. Box 8144, San Diego 2, Calif., 1960. 215 pages, $4.00.

This is an excellent little book, written with the purpose of clarifying the causations, diagnosis and treatment of allergic diseases to the layman. Unfortunately, it will miss the bulk of its projected buyers, for only the most intelligent and cooperative laymen would read and profit by it. The practicing allergist can learn from this volume how to answer the patient's questions satisfactorily. Doctors who are not allergists and who have never had any formal training in allergy should read a book like this, not only for their own benefit but for that of their patients. It would enable said doctors to direct people suffering from misdiagnosed "sinusitis," "bronchitis," "neurodermatitis," "indigestion," etc., to a competent allergist. Pardon My Sneeze could easily be expanded into an elementary textbook of allergy suitable for senior medical students or practitioners desiring a brief survey.

The first two-thirds of the book, dealing with allergic mechanisms, diseases and diagnosis, is the best. Most of the latter third is on the subject of food allergens, diaries, diets, etc. The reviewer thinks that the author has set the incidence and importance of food allergy too high. There are excellent lists of allergens and where to look for them. The section on air filtration is worthy of greater expansion and detail, along the lines of Max Samter's lectures.

In trying to make medical subjects more palatable to the layman, doctors often lean over backward to be humorous. The author has done this also. The title of "Pardon My Sneeze" appeals only to the more frivolous. The numerous cartoons, though clever, are distracting and add an air of levity to a well written discourse on a serious subject. They could possibly be put in a separate section at the end of the book.

As long as the average patient wants everything to be done for him by the doctor, books like this will not be as widely read as they deserve to be.

Milton M. Hartman, M.D.

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SIGNIFICANT TRENDS IN MEDICAL RESEARCH—Ciba Foundation, Tenth Anniversary Symposium—Editors for the Ciba Foundation, G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P.; Cecilia M. O'Connor, B.Sc., and Maeve O'Connor, B.A. Little, Brown and Company, Boston, Massachusetts, 1959. 356 pages, with 41 illustrations, $9.50.

This volume, the fiftieth in the series of the CIBA Foundation Symposia, is in many ways the best of the series and a remarkable book. The symposium was held to celebrate the tenth anniversary of the Foundation and the participants are a star-studded cast. Seven Nobel prize winners are included in those contributing to the discussions. The subjects range from molecular structure by Pauling to research in clinical nutrition by Brock and include a ten-year general survey of the field of neurophysiology by von Muralt, the nature and mechanism of action of hormones by Young, population dynamics of body cells by Burnet, genetics and medicine by Waldenström, malignant transformation by Haddow, chronic pulmonary disease by Richards, metabolic problems involving the pancreas by Best, biochemical chapters by Theorell and Schramm, essential hypertension by Pickering and a final chapter describing medical research in the U. S. by Shannon. Each paper is followed by a lively and penetrating discussion devoted primarily to classification of concepts.

The reaction that one gets to this book is of excitement —not only because of the great strides that have been made during the past ten years but because of the bold, broadly conceived concepts of the developments to be expected in the next ten years. The wide sweep from genes to enzymes to molecules to clinical disease will be of great interest to clinicians who have not perhaps been aware of the great strides that have been made in this direction. Predictions of future developments were made rather confidently by Pauling who stated that he estimates "1st March 1967 ± 2.5 years as the date when the announcement will be made that the first complete structure determination for a protein molecule, the determination by experiment (x-ray diffraction) of the relative positions in space of all of the atoms in the molecule, has been accomplished." When this and other knowledge regarding protein molecules has been achieved, detailed understanding of the mechanism of action of genes and enzymes and of the manner in which abnormal molecules produce disease will transform medicine from "macroscopic and cellular medicine to molecular medicine."

All of the participants agreed that one of the most significant trends in research in the past few years was the attempt to describe biological phenomena in chemical and physical terms. Schramm's chapter elaborates this theme, particularly with respect to the gene as the producer of a specific enzyme and the consequences thereof. Burnet summarized his contribution "that the phenomena of immunity are based on an evolved specialization of the capacity of all cells to mutate, that cancer is a manifestation of the selective short-term survival of cells which have gained proliferative advantage by sequential mutation, and that old age and death represent the cumulative effect of a burden of somatic mutation in the body cells."

Von Muralt summarizes very succinctly the ionic theory of excitation and the relationship between the nerve impulse and the contraction of muscle. He considers the "single unit approach," the intra-cellular microelectrode and radioactive isotopes as making possible the insights of the last decade in his field.

Many more illustrations could be given but perhaps enough has been said to whet the reader's appetite for a stimulating adventure into the thinking of superb minds. The book can be very heartily recommended.

MAURICE SOKOLOW, M.D.

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EXPERIMENTS AND OBSERVATIONS ON THE GASTRIC JUICE AND THE PHYSIOLOGY OF DIGESTION

—William Beaumont, M.D., Surgeon in the United States Army. Facsimile of the Original Edition of 1833, together with a Biographical Essay, A Pioneer American Physiologist, by Sir William Osler. Dover Publications, Inc., 180 Varick Street, New York 14, New York, 1960. 279 pages, $1.50.

Most people are not aware of William Beaumont's excellence as a physiological observer, and doctors are indebted to the editor and the publishers of this admirable reprint of "The Physiology of Digestion." The original issues have become very scarce and expensive, the first and second issues of the Plattsburgh volume now bringing about from $40 to $80 and thus being not readily available.

Furthermore ancillary matter of great interest has been incorporated with the reprint of the original book. Osler's essay on the "backwoods physiologist" telling much of the exciting story of Beaumont's relations with the temperamental St. Martin makes delightful reading.

The observations are too well known to allow analysis in this review; suffice it to say that their clarity and precision are unsurpassed in this sort of writing. Beaumont laid the foundations of the modern concepts of the physiology of digestion; more than this he cleared away much confusion and unsoundness in connection with the subject.

ARTHUR L. BLOOMFIELD, M.D.

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THE LIST METHOD OF PSYCHOTHERAPY

—Elizabeth Sher, Eleanor Messing, Theodora Hirschhorn, Enis Post, Annette Davis, and Arthur Messing. With an Introduction by Jacob S. List. Philosophical Library, 15 East 40th Street, New York, 1960. 258 pages, $7.50.

This book consists of a collection of papers written by the "disciples" of Jacob List, each one of whom had been previously treated and trained by him. The method he uses, which is described, relies heavily on a planned interaction between patients in the reception room and in other social situations designed to alter a patient's patterns of behavior, and on patients' returning to school in order to divert their attention from the problems which make them seek help in the first place. It would appear that patients who are treated by List and his group are those who are already aware of the existence of self-defeating patterns of behavior and who wish to change.

List is a former probation officer who studied psychology but was disillusioned by it as a discipline that could help people. He emphasizes that none of the contributors to this volume are "psychologists"—"they are holders of doctorates in education, not in psychology in the American Psychological Association sense." He belittles the experimental approach and emphasizes the interpersonal and social origins of neurotic disorders that were originally stressed by Fromm, Horney, and Sullivan.

He makes no distinction between types of cases treated; diagnosis is not mentioned. He provides no valid proof for the generalizations that are made regarding treatment. He uses Ferenczi as the authority to justify the warm, close relationship he fosters between the patient and his therapist —which includes such things as going to the toilet together, in part to facilitate discussion of bodily functions.

It is of interest that clients are sometimes referred to as "patients" and sometimes as "clients," suggesting some confusion in the self-image of the therapist. Psychotherapists are repeatedly equated with psychoanalysts—as if they were the same.

The book attempts to justify the entrance into one or another phase of the practice of medicine of individuals who possess unique ability rather than the minimal educational standards now required. It represents an approach that threatens to produce a chaotic situation in the healing arts and especially in the treatment of patients with emotional disorders—an approach which is consistent with the increasing trend on the part of social scientists to view man as a psychological organism rather than a psychobiological organism who is adjusting to his culture as well as to many other forces.

NORMAN Q. BRILL, M.D.

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ANATOMY—A Regional Study of Human Structure

—Ernest Gardner, M.D., Wayne State University; Donald J. Gray, Ph.D., Stanford University; and Ronan O'Rahilly, M.Sc., M.D., Wayne State University. Illustrated by Caspar Henselmann. W. B. Saunders Company, Philadelphia, 1960. 999 pages, $15.00.

The number of hours devoted to Gross Anatomy in the medical school curriculum has been drastically cut during the past few decades. A remedy for this condition has been the appearance of several textbooks written from the regional approach for more rapid comprehension by the student. The most recent and in many ways the best of these regional treatises is the collaborative effort of three eminent anatomists, Dr. Gray of Stanford University and Drs. Gardner and O'Rahilly of Wayne State University.

With about seventy-five years of collective teaching experience, these authors have assembled the basic facts, principles and concepts of anatomy with a clear, fresh viewpoint. After several brief authoritative introductory chapters on systematic anatomy, development and growth and radiological anatomy, the body is presented regionally, starting with the extremities and ending with the head and neck.

The regional descriptions include unique chapters on surface anatomy, physical examination and radiological anatomy. The book is superbly illustrated, with abundant original semidiagrammatic line drawings to clarify developmental aspects and functional concepts and with carefully selected photographs from life and x-ray plates. Descriptions of embryology are especially authoritative in the realm of bones and joints. The new (1955) Noma Anatomica terminology is used with English translations wherever possible and synonyms wherever necessary. Eponyms are avoided in the text, but a glossary of commonly encountered eponyms is provided as an appendix.

The advanced student of anatomy will appreciate the numerous bibliographical references to the recent literature. Although this book will not replace the longer standard systematic texts (such as the one by another Gray), it may well relegate the latter group to the status of reference books.

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ESSAYS ON THE FIRST HUNDRED YEARS OF ANAESTHESIA—Volume 1—W. Stanley Sykes, M.B.E., M.B., B. Chir. (Cantab.), D.A., Late Anesthetist to the General Infirmary at Leeds, to the Hospital for Women and St. James' Hospital, Leeds, to the Leeds Dental Hospital, to the Halifax Royal Infirmary and to the Dewsbury General Hospital. Distributed in the United States by The Williams & Wilkins Co., Baltimore 2, Md., 1960. 171 pages, $7.00.

One of Macaulay's essays opens with the statement, "We do not recall ever having seen an equal amount of matter which pleased us less." The reverse could be said about this delightful book. It consists of a series of essays on the history of anesthesia, not continuous but yet connected, which really cover the entire early story of the subject. Dr. Sykes, himself an "anaesthetist," writes in a delightfully witty style which would make his book pleasant reading even for a layman, and still he is a precise historian who has delved into the sources and has documented all his statements. There are numerous illustrations which enlighten the text appropriately.

Although this volume seems complete it is apparently Volume I of a series. One will look forward with interest to further essays on this subject.

ARTHUR L. BLOOMFIELD, M.D.

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DIAGNOSTIC ROENTGENOLOGY OF THE DIGESTIVE TRACT WITHOUT CONTRAST MEDIA—A Mount Sinai Hospital Monograph—Bernard S. Wolf, M.D., Director, Department of Radiology, The Mount Sinai Hospital, New York; Associate Clinical Professor of Radiology, Columbia University; Mansho T. Khilnani, M.B., Associate Fellow in Radiology, The Mount Sinai Hospital, New York; and Arthur Lautkin, M.D., Associate Radiologist, The Mount Sinai Hospital, New York; Associate Radiologist, Flower Fifth Avenue Hospital; Associate Clinical Professor, New York Medical College. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 180 pages, $8.75.

This monograph presents in orderly fashion a discussion of the diagnostic value of plain roentgenograms of the abdomen. Emphasis is placed on those conditions which may be unsuspected clinically. Mechanical obstruction and perforated viscus are therefore not included.

The four sections commence with general principles, and proceed through gastric, small bowel, and colonic lesions. The discussion under general principles is a good summary of basic physiology and anatomy of the intestinal tract. The attainment of as much information as possible from plain films of the abdomen is important and should be pursued; however, to be realistic, many lesions are not clearly delineated even with contrast studies. In general, most of the lesions discussed have to be confirmed with contrast studies.

The chapter on gastric lesions is divided into the normal stomach, gastric neoplasms, benign peptic ulcer and miscellaneous conditions. As in the first chapter, the discussion is followed by illustrations depicting the principles of the text. Intrinsic lesions such as gastric carcinoma are not clearly separable from extrinsic masses by the illustrations. However, there is good correlation between the plain films and subsequent barium studies.

The section on the small bowel includes discussion and illustration of the duodenum, normal small bowel, tumors, inflammatory disease, vascular disorders, and miscellaneous small bowel lesions. The lesions described are not at all convincing on the plain films.

The final chapter on the colon contains subsections on the normal colon, carcinoma, ulcerative colitis, and miscellaneous lesions. The author feels that plain films are superior to contrast studies in acute ulcerative colitis due to the obliteration of functional changes from the nonphysiologic distention required at barium enema.

Organization of the material is simple and effective. The text is easily readable, references adequate, and reproduction of illustrations good.

The monograph is recommended to residents in radiology and to practicing radiologists as a reference. To physicians not experienced in radiology, this material might lead to gross over-reading in many instances.

JOHN H. HEALD, M.D.

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MINORITY, A—A Report on the Life of the Male Homosexual in Great Britain—Gordon Westwood; Longmans, Green & Co., Inc., 119 West 40th Street, New York 18, N. Y., 1960. 216 pages, $7.00.

According to the flyleaf this book contains the results of the most extensive research on the subject of male homosexuality yet to have been published. Over a period of two years the author met and talked with more than 100 homosexuals and obtained factual information on their family background, social behavior, and sexual activities. The author makes the comment that in no other field of scientific research is there to be encountered the antipathy and the obstacles which one sees in any aspect of sexual research, particularly that involving the sexual deviations. He points out how very little is known about homosexuality and about those who commit homosexual acts and what a dearth of material there is available on the social and familial antecedents of homosexuals.

One hundred twenty-seven homosexuals were interviewed. Information was obtained on their family backgrounds, relationships to parents and siblings, the nature and character of their early homosexual experiences, extent of homosexual acts and interests, and the nature and quality of the adjustment or lack of same to their homosexuality. The author makes the valuable point that homosexuality is not just a sexual problem alone, that it forces those who practice it into a minority group which obeys the same rules of social and psychological behavior as do minority groups of a religious and racial character. The sample has the value that it embraces persons of mixed educational, work, and social backgrounds and, in contradistinction to other studies of this character, interviews and contacts subjects who lead useful and productive lives.

While there is a real dearth in the literature of scientific studies of the antecedents and personality development of any statistically significant sample of persons with paraphiliac sexual interests, this study is far from meeting the need. The interviews were not done in sufficient depth and the anamnestic material gained, while valuable, leaves large areas of personality and social orientation unexplored and untapped. A definitive study of this type has yet to be done, but anyone contemplating such a study could obtain valuable information and leads from this book.

C. W. WAHL, M.D.

YEAR BOOK OF DRUG THERAPY, THE—(1959-1960 Year Book Series)—edited by Harry Beckman, M.D., Director, Departments of Pharmacology, Marquette University Schools of Medicine and Dentistry; Consulting Physician, Milwaukee County General and Columbia Hospitals, Milwaukee, Wisconsin. The Year Book Publishers, Inc., 200 E. Illinois St., Chicago 11, 1960. 570 pages, $8.50.

The Year Book of Drug Therapy has always been a good volume to consult for abstracts about new drugs in the practice of medicine. This year it is even better than usual as Dr. Beckman proceeds from unadorned abstracting and the editing of abstracts to the next stage . . . an evaluation of the current drugs and their place in modern medicine. In his introduction to this volume, he discusses the relationship of the manufacturing drug industry and its advertising to doctors and the practice of medicine. He shares the apprehension which most thoughtful physicians have about the increased amount of drug advertising, the methods used in detailing drugs, ("the contrived illustration and gaudy and expensive colored releases"), the attempts to make bibliographic references worth more than they are worth, and the occasional gross misrepresentation. As he sees it, "this development is but part and parcel of the new order of things in the world"—just one of the many problems of our era. And this book will help to cope with it.

Two new chapters are added. The first is entitled "Bases for Judgment of a New Drug." The considerations which are important include how the drug was produced, the need for the drug, whether it is worth the price, and what side actions or contra-indications may be predictable. Dr. Beckman emphasizes the need for confirmation of the manufacturer's findings by independent, interested and competent investigators.

The second new chapter comprises a catalogue of the new drugs released for market by the Food and Drug Administration during the twelve months preceding press time for this volume. In this section, there are 334 items on which Dr. Beckman comments briefly. This is the best comprehensive summary of new drugs which the reviewer knows, and is a veritable strip-mine of readily available information.

The general body of the book seems to improve as the years go by. We enjoy particularly Dr. Beckman's comments, which are often entertaining as well as enlightening.

EDGAR WAYBURN, M.D.

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HEAD, NECK, AND TRUNK, THE—Muscles and Motor Points—2nd Edition—By Daniel P. Quiring, PhD., Late Head of the Anatomy Division, Cleveland Clinic Foundation and Associate Professor of Biology, Western Reserve University. Revised and Edited by John H. Warfel, Ph.D., Assistant Professor of Anatomy, The University of Buffalo, School of Medicine, Buffalo, New York. Lea & Febiger, 600 Washington Square, Philadelphia 6, Pa., 1960. 124 pages, 109 illustrations, $3.25.

It is difficult to define the exact place wherein a book such as this will find its greatest utility. The second edition, like the first, presents a concise and well-portrayed series of anatomical outline drawings illustrating the voluntary musculature of the head, neck and trunk on an individual basis, together with appropriate nervous and vascular relationships. Consequently it is of considerable value as an adjunct to the definitive reference works in gross anatomy, i. e., Gray or Cunningham, to each of which citations are made in the descriptive text. To this extent, it achieves quite successfully its aims.

Its principal shortcomings, it seems to me, result from the fact that works of this type are neither texts nor atlases, and cannot substitute for either. As a reminder for the professional man in medicine or dentistry, I would expect such a volume might be referred to frequently. As an aid to the freshman medical student, already burdened with oversized text-books, atlases and dissecting manuals, I venture to guess its utility would be something less than great.

I have no hesitation in recommending this volume, together with its companion (The Extremities), as a worthwhile addition to the libraries of practicing surgeons and dentists. However, I cannot help but wonder how long a time it will be before revised editions of Cunningham or Gray make obsolete the page citations presented in this book.

R. C. GREULICH

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YOUR CHILD'S CARE—1001 QUESTIONS AND ANSWERS—A New, Revised, and Enlarged Edition of "A Pediatric Manual for Mothers"—Harry R. Litchfield, M.D., F.A.C.P., and Leon H. Dembo, M.D.,; Doubleday & Company, Inc., 575 Madison Avenue, New York 22, N. Y., 1960. 257 pages, $3.95.

This volume is a compilation of 1,000 questions with sensible answers that mothers have asked the authors in the long years of their experience. The subjects cover practically the whole experiences of the parent and child in his journey from the fetus through the age of childhood in his emotional, physical and pathological experiences. The answers are clear, concise and fully explanatory. The answers do not include treatment and reference is constantly made to the doctor for such treatment and correction. It is a book for mothers and as such will be of great help to them in the care of their children. The answers given by the authors are in complete conformity with modern pediatric practices.

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HEART IN INDUSTRY, THE—By Twenty-Four Authors — Edited by Leon J. Warshaw, M.D., F.A.C.P., Consultant in Occupational Health; Medical Director, Paramount Pictures Corporation; Medical Director, United Artists Corporation, New York. Foreword by Irving S. Wright, M.D. Paul B. Hoeber, Inc. Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 677 pages, $16.00.

With the increasing importance of and interest in the industrial aspects of cardiac disease this is the second volume on the subject to appear recently (the other: "Work and the Heart," by Rosenbaum and Belknap). The major subjects covered in the book include the physiological effect of work on the heart, rehabilitation and placement of the cardiac, psychiatric aspects of cardiovascular disease in industry, cardiovascular effects of toxic occupational exposures, traumatic heart disease and many others. Most of the chapters are authoritatively written and easily readable. A certain redundancy inherent in multiple authorship is apparent, as its unnecessary lengthiness of some subjects. For example, the chapter "Detection and Evaluation of Heart Disease in Industry" includes a description of history, physical examination, roentgenology, electrocardiography and special diagnostic procedures—in short, the entire subject of diagnostic cardiology. Obviously, those unfamiliar with the subject will not be able to acquire the knowledge of it from a 60-page chapter; others will find a good part of the chapter superfluous. Bibliography is uneven: some chapters contain a well-chosen, fairly comprehensive coverage of the subject, others include a mere handful of references. As a whole, the book is a valuable addition to a cardiologist's library; it covers many subjects which are not often included in conventional texts of cardiovascular disease. It is recommended not only to physicians who have dealings with industrial medicine but to internists and cardiologists in general, for the evaluation of the patient's ability to work is part and parcel of medical practice.

A. SELZER, M.D.

BABY TALK—Morris Val Jones, Ph.D., Specialist in Speech and Hearing, School for Cerebral Palsied Children, San Francisco, California; formerly, Associate Professor of Speech, Illinois State Normal University, Normal, Illinois. With a Preface by John Wedell, M.D., Chief, Medical Staff, School for Cerebral Palsied Children, San Francisco, California. With an Introductory Statement by E. A. Lown, Superintendent, School for Cerebral Palsied Children, Northern California, San Francisco, California; Charles C. Thomas, Publisher, 301-327 East Lawrence Avenue, Springfield, Illinois, 1960. 96 pages, $4.50.

The title of this valuable book was jarring to the reviewer for it does not appeal to the fundamental causes of speech difficulties . . . even though "baby talk" is defined on the first page of the text as "when the pattern of sounds omitted, substituted, or defective in other ways resembles the typical speech of the young, it is often referred to as 'baby talk.'" There is so much in the text that covers the parent child relationship, the organic and psychological causes of speech defects that a better title could have been chosen.

It is difficult to know for whom the book was written, the physician dealing with children, the mother who has a child with a speech defect or a speech therapist. The physician could use the book as a text to be used in evaluating a speech defect problem and as a guide to the mother in analysis and self help. If written solely for the mother without professional help she would become discouraged before she got very far. Yet the whole text is directed to mother. There are a series of 10 quizzes and answers to each question in an appendix. These are excellent in developing the mother's understanding of the problem and its solution. But with all this the mother is met with such statements as "your program may end in failure." Its worth is more for the speech therapist to use this volume as a text book for the parent under his guidance. As such it is well worth while.

* * *

CELLULAR ASPECTS OF IMMUNITY—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A., editors for the Ciba Foundation. Little, Brown and Company, Boston, 1960. 495 pages, $10.50.

One has only to peruse the list of contributors to this Symposium to realize that it contains a large majority of the most prominent investigators in the rapidly evolving field of immunology. Among the 34 participants from all places in the world are such names as Sir Macfarlane Burnet, P. B. Medawar, J. Lederberg, H. S. Lawrence and many others.

The Symposium was held in London in early June 1959 and is another one of the many timely topics to be supported and published by the Ciba Foundation. Because of the rapidly changing character of the field of cellular immunity the editors are to be commended for the prompt publication of this monograph.

The contents consist of 20 chapters and several shorter communications. Nearly all of the material is presented clearly and concisely and the experimental data that is given is carefully limited to the topic under discussion. In addition to the presentation of facts and observations a considerable amount of stimulating theoretical speculation is also indulged in especially in regard to the phenomenon of immunological tolerance and to the clonal selection theory of antibody formation. The contents of the discussion which followed each paper are published in detail and greatly enhance the formal topics. Often as many as 10 or 12 experts engage in these revealing discussions.

So many complex topics are dealt with in this book that it is obviously impossible to even mention more than a few of them. In general the first several chapters deal with various aspects of the immunologically competent cell which has now assumed the central role in immunology, replacing the antibody from this position. Lively discussion then centers about the function of the plasma cell, the small lymphocyte and the various mechanisms whereby antibodies may be formed and immunologic information conveyed from one competent cell to its descendants. Other topics, slightly aside from this central basic theme, are discussed in the final few chapters.

In general there has been condensed into this relatively small volume a remarkable amount of information by leaders in the field. It is clearly printed on good quality paper and the illustrations are excellent. Currently it is the most authoritative accumulation of topics in immunology. The book should be required reading for all persons entering the field of immunology as well as for others within and those on the periphery of this increasingly important field. The editors as well as the Ciba Foundation and the publishers are to be congratulated for their foresight in the organization and pursuance of this Symposium.

Carl M. Pearson, M.D.

* * *

OTHER CHILD, THE—THE BRAIN-INJURED CHILD —A Book for Parents and Laymen—Second Revised and Enlarged Edition—Richard S. Lewis, Alfred A. Strauss, and Laura E. Lehtinen. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 148 pages, $3.75.

In certain areas of writing, texts designed for the laity make very excellent medical reading because of their clarity and because of the forcefulness of their presentation. This little book, concerned with brain-damaged children, is an excellent example of such a text. Drawing on the excellent work of Strauss and Lehtinen, the book describes in considerable detail the problems faced by the brain-injured child and the reasons that his care may be difficult but also can be helped. It is important that the book starts out in describing these children not with a description of the motor behavior and the clumsiness, symptoms so commonly attributed to these children: but of the major difficulty, namely that of perception. Quite logically the chapters of the book proceed from perception through conception and language, and then last to behavior. Thus, the individual concerned with the erratic, impulsive behavior of some of these children is prepared on the basis of knowledge of the central problem for an approach to their management. Here the book is especially good in that it describes the possibilities of management for teachers and parents in words that are easily understandable and which have real meaning to those who have to have close contact with such children. Finally a chapter on education summarizes the current thinking about the care of such children, and points out the greater opportunities for education that are available under better organized auspices. All in all, this is a most readable little text and one that would be a great service to anyone dealing with children who is confused by the curious problems of the brain-injured child.

Henry H. Work, M.D.

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DROWSINESS	20%	0%	0%	0%	0%
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HEMORRHAGE	0%	9%	3%	9%	10%
PERFORATION	0%	0%	0%	6%	0%
OPERATION	0%	5%	5%	14%	2%
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twater, J. S., and Carson, J. M.: Therapeutic Principles in Management of Peptic Ulcer. **Am. J. Digest. Dis.** 4:1055 (Dec.) 1959.

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Gout More Prevalent in Women Than Generally Believed

The incidence of gout in women has been found to be "considerably higher" than generally believed in a recent study.

Gout is a disease characterized by a painful inflammation of the joints of the hands and feet. It is caused by the accumulation of uric acid in the blood.

The study was based on 74 cases of gouty arthritis seen at two large Detroit hospitals, Detroit Receiving and Wayne County General, during the past four years.

Writing in the September *Archives of Internal Medicine*, published by the American Medical Association, four researchers said gout is generally considered to be a disease primarily affecting the middle-aged white man.

However, they said 19 of the 74 patients were women and 45 of the 74 were Negroes.

"In our experience, gouty arthritis is a relatively common disease which can strike both Negro and white, man and woman," they concluded.

"No significant racial differences in the incidence of gout were noted when the figures were compared to statistics for hospital admissions.

"The incidence of gout in women was found to be considerably higher than is usually reported."

The authors of the article are Rachel E. Turner, M.R.C.S., L.R.P.C.; Martin J. Frank, M.D.; Dorothy Van Ausdal, M.D., and Alfred Jay Bollet, M.D.

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Twin Status Does Not Predispose To Mental Illness

The best evidence available indicates that neither schizophrenia nor psychiatric illness requiring hospitalization occurs more frequently in twins than in nontwins.

This is the conclusion drawn by David Rosenthal, Ph.D., Laboratory of Psychology, National Institute of Mental Health, Bethesda, Md., in the September

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The clinicians note that impairment in hearing, disturbance in balance, and tinnitus involving the inner ear "may be explained on the basis of labyrinthine artery insufficiency" due to spasm or obstruction of the vessels. Arlidin was found to be "superior to all other vasodilating measures" in increasing blood flow through these vessels and in allaying spasm.

Archives of General Psychiatry, published by the American Medical Association.

This finding suggests that the "confusion of ego identity" said to occur commonly among twins is not a causal factor in schizophrenia, he said.

Dr. Rosenthal cited figures, based on studies in Sweden and Germany, showing that the frequency of twins in the population of schizophrenics is actually less than the estimated frequency of twins in the general population.

Some authorities maintain that twins are more likely to develop confusion of identity because they are dressed alike and treated alike and have more problems of sharing, especially of the mother, than their siblings.

However, Dr. Rosenthal said if this were true, schizophrenia should occur more frequently among twins than among nontwins. Since this is not the case, he said, the theory is doubtful.

The author questioned whether the confusion of identity found among twins "is not something quite different from the confused identity found commonly in schizophrenics or in some preschizophrenics." He also suggested that confusion of identity could be a symptom, rather than a cause, of schizophrenia.

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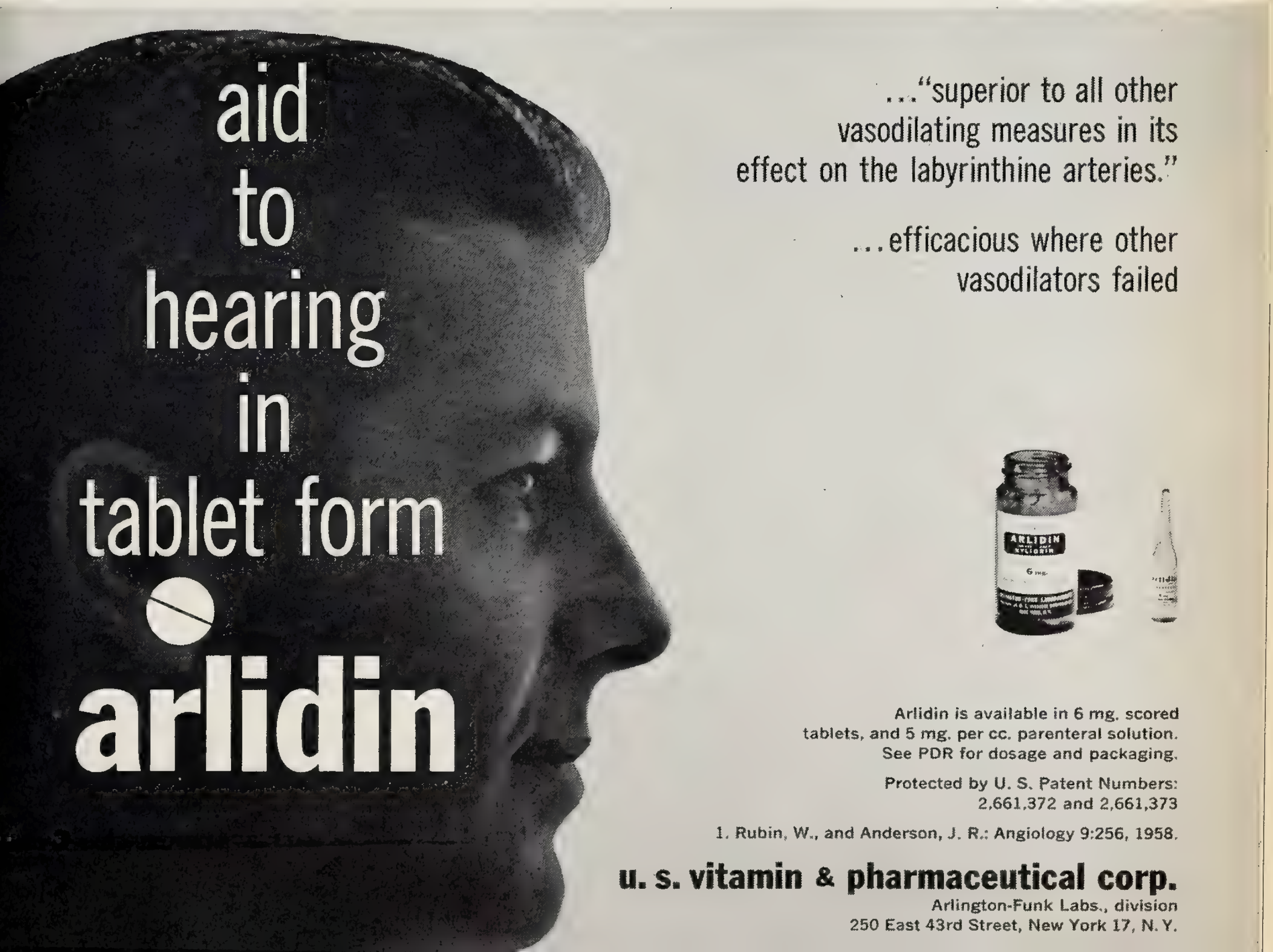

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1. Rubin, W., and Anderson, J. R.: Angiology 9:256, 1958.

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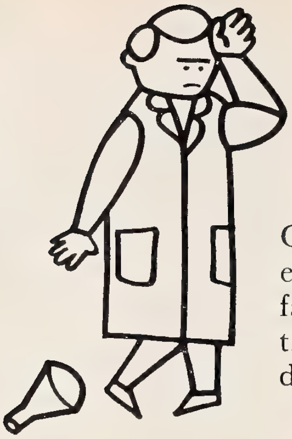

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1. Cameron, E.: The Use of Tofrānil in the Aged, Canad. Psychiat. A. J. Special Supplement, **4**:S160, 1959. 2. Christe, P.: Indications for Tofrānil in Geriatrics, Schweiz. med. Wchnschr. **90**:586, 1960. 3. Schmied, J., and Ziegler, A.: Tofrānil in Geriatrics, Praxis **49**:472, 1960.

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BOOKS RECEIVED

Books received by CALIFORNIA MEDICINE *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits.*

ADVENTURE TO MOTHERHOOD—The Picture Story of Pregnancy and Childbirth—J. Allan Offen, M.D., Assistant Professor of Obstetrics and Gynecology, University of Miami School of Medicine. Audio Visual Education Company of America, Inc., Post Office Box 52-6, Miami 52, Fla., 1960. About 70 pages with illustrations in color on each page (pages not numbered), $2.95.

CARDIAC EMERGENCIES AND RELATED DISORDERS—Their Mechanism, Recognition and Management—Harold D. Levine, M.D., Senior Associate in Medicine, Peter Bent Brigham Hospital, Boston, Mass.; Assistant Clinical Professor of Medicine, Harvard Medical School. Landsberger Medical Books, Inc., 51 East 42nd Street, New York, N. Y., 1960. 381 pages, $12.00.

CELLULAR ASPECTS OF IMMUNITY—Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Maeve O'Connor, B.A., editors for the Ciba Foundation. Little, Brown and Company, Boston, 1960. 495 pages, $10.50.

CLAIMS MEDICAL MANUAL—Second Revised Edition—Packard Thurber, M.D., Packard Thurber, Jr., M.D., and others. Pacific Books, publishers, Palo Alto, California, 1960. 116 pages, $2.50.

CLINICAL OBSTETRICS AND GYNECOLOGY—June 1960—Volume 3, No. 2.—Physiology of Pregnancy, Ernest W. Page, M.D., Editor, and Endometriosis, Charles S. Stevenson, M.D., Editor. A Quarterly Book Series, published by Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. $18.00 a year for four consecutive numbers issued quarterly (by subscription only).

DIABETIC CARE IN PICTURES—Simplified Statements with Illustrations Prepared for the Use of the Patient—3rd Edition—Helen Rosenthal, B.S., Former Chief, Frances Stern Food Clinic, The Boston Dispensary; Former Assistant in Medicine at the School of Medicine, Tufts University; and Joseph Rosenthal, M.D., Assistant Professor of Medicine at the School of Medicine, Tufts University, and Assistant Professor of Medicine in the Postgraduate Division at the School of Medicine, Tufts University. Prepared under the direction of the Authors. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Penn., 1960. 237 pages, 137 illustrations (including 12 in color), $4.50.

DIAGNOSTIC ROENTGENOLOGY OF THE DIGESTIVE TRACT WITHOUT CONTRAST MEDIA—A Mount Sinai Hospital Monograph—Bernard S. Wolf, M.D., Director, Department of Radiology, The Mount Sinai Hospital, New York; Associate Clinical Professor of Radiology, Columbia University; Mansho T. Khilnani, M.B., Associate Fellow in Radiology, The Mount Sinai Hospital, New York; and Arthur Lautkin, M.D., Associate Radiologist, The Mount Sinai Hospital, New York; Associate Radiologist, Flower Fifth Avenue Hospital; Associate Clinical Professor, New York Medical College. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 180 pages, $8.75.

FUNDAMENTALS OF NERVE BLOCKING—Vincent J. Collins, M.S., M.D., Associate Professor of Anesthesiology, New York University Medical Center and Anesthesiologist, Bellevue Hospital Center. With the Assistance of Emery Andrew Rovenstine, M.D., Professor of Anesthesiology and Chairman of Department of Anesthesiology, New York University Medical Center and Director Division of Anesthesia, Bellevue Hospital Center. Lea & Febiger, South Washington Square, Philadelphia 6, Pa., 1960. 354 pages, $9.50.

HUMAN TOXOPLASMOSIS—Proceedings of the Conference on Clinical Aspects and Diagnostic Problems of Toxoplasmosis in Paediatrics at the VIII International Congress of Paediatrics, Copenhagen, 1956; Revised and edited 1959. Edited by J. Chr. Siim, M.D., Director, The Toxoplasmosis Department, State Serum Institute, Copenhagen, Denmark. The Williams & Wilkins Company, Baltimore 2, Md., 1960. 220 pages, $12.50.

(Continued on Page 90)

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lances the mood — no "seesaw"
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Bibliography *(13 clinical studies, 858 patients)*: **1.** Alexander, L. (35 patients): Chemotherapy of depression – Use of meprobamate combined with benactyzine (2-diethylaminoethyl benzilate) hydrochloride. J.A.M.A. *166*:1019, March 1, 1958. **2.** Bateman, J. C. and Carlton, H. N. (50 patients): Meprobamate and benactyzine hydrochloride (Deprol) as adjunctive therapy for patients with advanced cancer. Antibiotic Med. & Clin. Therapy 6:648, Nov. 1959. **3.** Beerman, H. M. (44 patients): The treatment of depression with meprobamate and benactyzine hydrochloride. Western Med. *1*:10, March 1960. **4.** Bell, J. L., Tauber, H., Santy, A. and Pulito, F. (77 patients): Treatment of depressive states in office practice. Dis. Nerv. System 20:263, June 1959. **5.** Breitner, C. (31 patients): On mental depressions. Dis. Nerv. System 20:142, (Section Two), May 1959. **6.** Gordon, P. E. (50 patients): Deprol in the treatment of depression. Dis. Nerv. System *21*:215, April 1960. **7.** Landman, M. E. (50 patients): Clinical trial of a new antidepressive agent. J. M. Soc. New Jersey. In press, 1960. **8.** McClure, C. W., Papas, P. N., Speare, G. S., Palmer, E., Slattery, J. J., Konefal, S. H., Henken, B. S., Wood, C. A. and Ceresia, G. B. (128 patients): Treatment of depression – New technics and therapy. Am. Pract. & Digest Treat. *10*:1525, Sept. 1959. **9.** Pennington, V. M. (135 patients): Meprobamate-benactyzine (Deprol) in the treatment of chronic brain syndrome, schizophrenia and senility. J. Am. Geriatrics Soc. 7:656, Aug. 1959. **10.** Rickels, K. and Ewing, J. H. (35 patients): Deprol in depressive conditions. Dis. Nerv. System 20:364, (Section One), Aug. 1959. **11.** Ruchwarger, A. (87 patients): Use of Deprol (meprobamate combined with benactyzine hydrochloride) in the office treatment of depression. M. Ann. District of Columbia 28:438, Aug. 1959. **12.** Settel, E. (52 patients): Treatment of depression in the elderly with a meprobamate-benactyzine hydrochloride combination. Antibiotic Med. & Clin. Therapy 7:28, Jan. 1960. **13.** Splitter, S. R. (84 patients): Treatment of the anxious patient in general practice. J. Clin. & Exper. Psychopath. In press, April-June 1960.

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Strict Control of Diabetic Needed To Prevent Complications

A lack of medical control of the diabetic is the "prime factor" in the occurrence of kidney complications, two British researchers have said.

M. Nagy El Mahallawy, M.B., M.D., and M. S. Sabour, D.M., M.R.C.P., Grimsby, England, reported on a study of 391 patients at the diabetic clinic of Ain-Shams University Hospital, Cairo, U.A.R., in the August 20 *Journal of the American Medical Association.*

They said "a long period of uncontrolled, or inadequately controlled, diabetes was the prime factor responsible for the development" of kidney disease in the diabetic.

Insulin and antibiotics have saved the diabetic from early death, from coma and infections, almost tripling his life expectancy, they pointed out. Now, complications, primarily of the kidney, are the "chief problem" in the disease, they said.

Although most medical men agree that kidney complications are related to the duration of the disease, the two researchers said, there is some controversy about whether good control of the diabetic state over the years protects the patient from these complications.

"In this study, a definite relationship between the degree of control of diabetes and the incidence of diabetic nephropathy [kidney disease] was found," they said.

"It is apparent that a shorter duration, e.g., five years, is sufficient for a poorly controlled diabetic to develop these complications, while a longer time, e.g., 10 or 15 years, is necessary for a moderately controlled diabetic to develop them, and a patient with an excellent degree of control of his metabolic error will not develop vascular complications no matter how long diabetes remains.

"The duration of diabetes thus plays its role only in the presence of deficient control by prolonging the period of this deficient control and exaggerating an abnormal physiology in the poorly controlled diabetic subject."

The two authors said they believe the discovery of the various factors that influence the development of diabetic complications will bring stricter rules and additional rules for medical control of the diabetic.

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Valuable Vaccine Found For Staph Infections

A vaccine against staphylococci, infection-causing bacteria, brought an "excellent response" in 44 of 60 patients, two Washington, D. C., researchers have reported.

The vaccine was termed "a valuable therapeutic agent" for recurring, persistent, or severe staph infections by Kenneth L. McCoy, M.D., and Eugene R. Kennedy, Ph.D., of Washington's Providence Hospital, in the September 3 *Journal of the American Medical Association.*

In most patients, the staph had caused an outbreak of boils.

In 44 cases, the patients had a rapid clearing of the infection and freedom from reinfection for six months or longer, the authors reported. Eleven patients had an initially favorable response followed by a recurrence of the infection which could be controlled again by the vaccine. The other five derived no observable benefit from the vaccine.

As is true with other vaccines, they said, "the ability of the individual person to respond varies; thus we are not surprised by some failures with this vaccine."

The vaccine was used when routine therapy, such as antibiotics, failed. In each case, the vaccine was made from the bacteria present in the patient.

The authors said it was a reasonable assumption that an effective vaccine would have to be capable of producing antibodies specifically resistant to each individual's bacteria since staph are believed to differ in strain and type.

Other similar vaccines have proved of little benefit, however, and the authors said they felt their success was due to the method of preparation.

The two researchers said occasionally when treating a patient with this type of vaccine they also had used it for others in the patient's family or institution.

"In 1957," they said, "we were faced with an infection problem in a home for orphans which was finally brought under control by use of vaccine on a large number of the group."

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General Principles Best in Teaching Resuscitation

Instruction in first-aid resuscitation should stress general principles rather than detailed technique, according to an article in the September 3 *Journal of the American Medical Association.*

In emergencies, resuscitation measures are altered or improvised to fit circumstances, a study reported by Drs. James O. Elam and David G. Greene, Buffalo, N. Y., and Dr. Arne M. Ruben, Karlskrona, Sweden, indicated.

During May and June, 1959, a campaign was conducted in Sweden to teach the mouth-to-mouth method to the public by means of newspapers, radio, television, and pamphlets.

From questionnaires sent to rescuers who revived victims in 19 subsequent near-drownings it was found that a thumb-in-the-mouth technique was rarely used although it had been stressed in the campaign. It was also found that improvised methods proved successful when substituted for taught techniques that proved unworkable.

"The ability of laymen to substitute their own techniques for an unworkable method they had been taught indicates the need to teach broad general principles for resuscitation," the authors said.

In 52 cases from May to September, 1959, where water victims were given oral resuscitation, 19 persons survived, they added.

"This salvage rate of 36 per cent is encouraging but might be improved considerably with additional training in simpler techniques," they said.

BOOKS RECEIVED

(Continued from Page 82)

SHAW'S TEXTBOOK OF OPERATIVE GYNAECOLOGY—Second Edition—Revised by John Howkins, M.D., M.S. (London), F.R.C.S. (Eng.) F.R.C.O.G., St. Bartholomew's Hospital, University of London and University of Cambridge. The Williams and Wilkins Company, Baltimore, 1960. 484 pages, $20.00.

SIGHT—A Handbook For Laymen—Roy O. Scholz, M.D., Ophthalmologist, The Johns Hopkins Hospital, and Ophthalmologist-in-Charge, Out-Patient Department, The Johns Hopkins Hospital. Doubleday & Company, Inc., Garden City, N. Y., 1960. 166 pages, $3.50.

STAINING METHODS—Histologic and Histochemical—J. F. A. McManus, M.D., Professor and Chairman of Department of Pathology, University of Alabama Medical Center; and Robert W. Mowry, M.D., Professor of Pathology, University of Alabama Medical Center. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East Thirty-Third Street, New York 16, N. Y., 1960. 423 pages, $10.00.

SYNOPSIS OF PATHOLOGY—Fifth Edition—W. A. D. Anderson, M.A., M.D., F.A.C.P. F.C.A.P., Professor of Pathology, University of Miami School of Medicine; Director of Pathology Laboratories, Jackson Memorial Hospital, Miami, Florida. The C. V. Mosby Company, 3207 Washington Boulevard, St. Louis 3, Mo., 1960. 876 pages, with 414 Text Illustrations and 4 color plates, $9.25.

VISUAL AIDS IN CARDIOLOGIC DIAGNOSIS AND TREATMENT—edited by Arthur M. Master, M.D., and Ephram Donoso, M.D. Sponsored by the American College of Chest Physicians. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 216 pages, $10.00.

YOU CAN PREVENT ILLNESS—Edward R. Pinckney, M.D. J. P. Lippincott Company, Philadelphia, 1960. 157 pages, $3.50.

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Sleepwalkers Should Be Awakened To Avoid Accidents

Sleepwalkers should be awakened from their somnambulant sojourns because they are often victims of accidents.

The popular notion that waking a sleepwalker will cause a harmful shock is debunked in the September *Today's Health* magazine, published by the American Medical Association.

The belief that sleepwalkers, of whom there are an estimated four million in the United States, never injure themselves has been disproved, according to an article in the magazine.

"The fact is that the majority of sleepwalkers fall downstairs, suffer cuts or burns, trip over rugs, and bump their heads against doors," it said. "Many of them have been injured seriously."

The shock of being awakened is no greater to the sleepwalker, psychiatrists say, than his being aroused from normal sleep by someone shaking him.

"Common sense dictates that you wait until the walker moves out of a dangerous position before you awaken him," the article said. "Or remove the danger, if possible, and then gently wake him."

The article also pointed out that reports of sensational feats of sleepwalkers should be viewed with skepticism.

Dr. Ernst Jolowicz, New York psychiatrist, believes claims of superhuman dexterity are nonsense, according to the article. He was quoted as saying that sleepwalkers rarely undertake feats beyond their actual capacities. However, he added that the sleepwalker has no psychological inhibitions and can therefore exert his greatest physiological powers.

Sleepwalkers are "partly awake and partly asleep," the article continued, adding:

"That explains why many chronic sleepwalkers discover that it's no use at all to rig up all sorts of Rube Goldberg contrivances to wake themselves. Even though they do things like bolting the windows and doors or tying themselves to the bed, they are apparently conscious enough to avoid or overcome the very gadgets they have set up as sleepwalking preventatives."

Psychiatrists believe sleepwalking in most cases is a symptom of emotional disturbance, the article said. Generally speaking, it said, it is a kind of "dream in pantomime" in which certain drives or conflicts are acted out.

"Most of us dream quietly in bed," it said. "Sleepwalkers act out their dreams; their behavior during noctambulation seems to be directly related to the dream content and, like the dream, may often be symbolic in expression.

"The best cure for sleepwalking—in child or adult—is to remove the anxiety or anxieties which cause it."

The author of the article is Jack Kaplan.

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HOW EFFECTIVE IS IOQUIN?

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HOW SAFE IS IOQUIN?

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Ioquin is indicated for the treatment of mild or severe seborrheic dermatitis . . . *and is equally effective for dry or oily scalps.*

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Treatment with Ioquin is a simple wash and rinse procedure. Most cases of simple dandruff can be brought under control in two to three weeks and kept under control with weekly applications (some cases are controlled with even less frequent applications).

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008-271

Safer Passenger "Packaging" Urged to Cut Auto Deaths

Physicians believe safer "packaging" of automobile passengers could reduce traffic deaths and injuries, an opinion survey made by the American Medical Association showed recently.

Members of the American Association for Automotive Medicine (AAAM), most of whom have competed in sports car races and promoted safer auto racing, were polled at a safety seminar in Dearborn, Mich.

The physician experts in automotive medicine rated the seat belt the most important single, economically feasible device now available to protect passengers.

"Packaging a passenger in an automobile follows the same principles of packaging used to protect any valuable object being transported," according to Dr. H. A. Fenner, Hobbs, N.M., newly-elected American Association for Automotive Medicine president.

"The automobile, like any container being used to transport valuable contents, must be designed so as not to crush in on the contents, burst open, or spill out the contents."

In addition to seat belts, which many believed should be compulsory, the physicians recommended these "packaging" improvements:

(Continued on Page 32)

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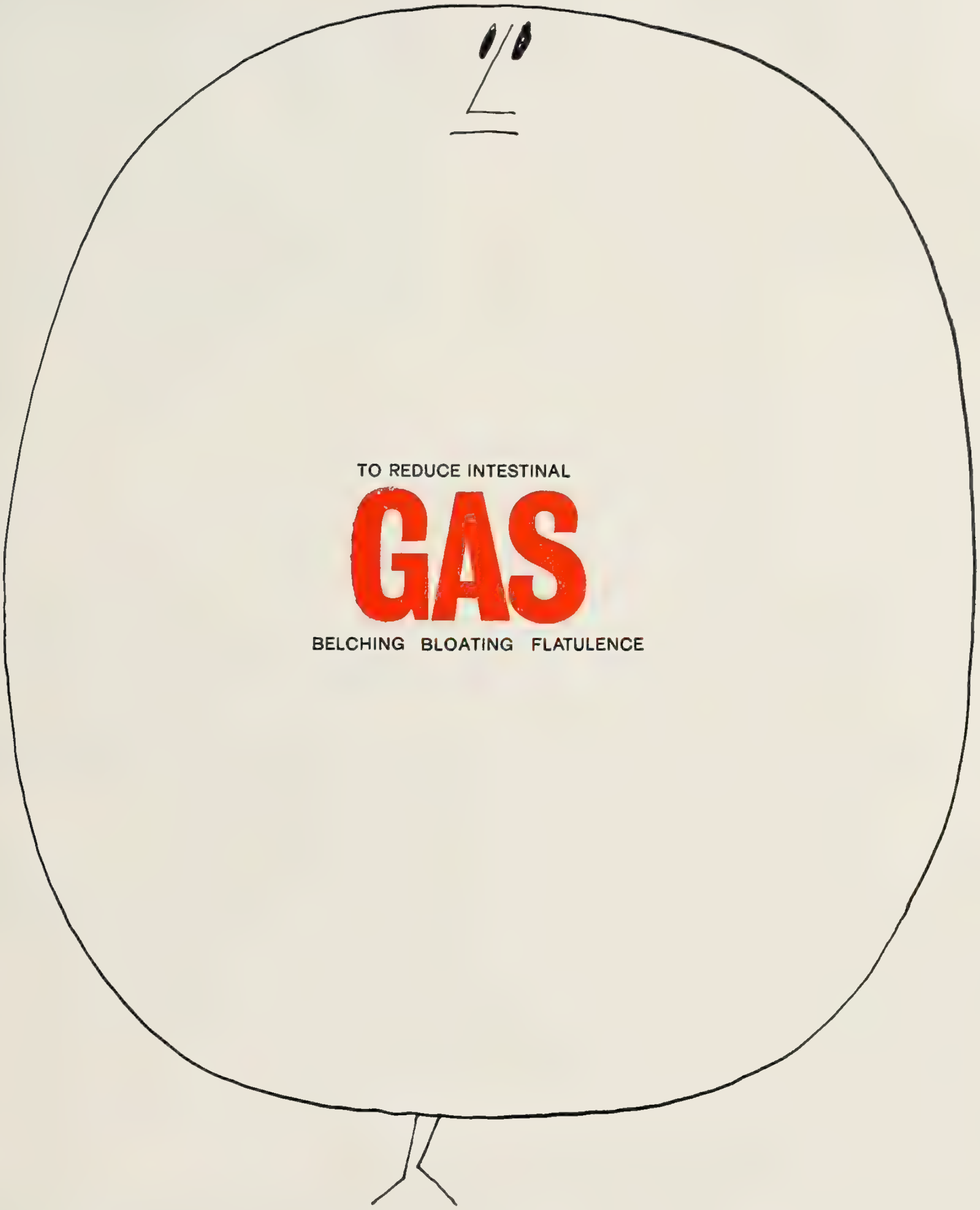
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Safer Passenger "Packaging" Urged to Cut Auto Deaths

(Continued from Page 26)

—Padded instrument panels, roof supports, and steering column posts.

—Modified dash board so knees would not hit it directly in an accident.

—Safety door locks.

—High seat backs to prevent "head snapping."

—Deep dish steering wheels.

—Elimination of junk-accumulating ledge behind the back seat.

—Elimination of all dangerous pointed objects, projections, sharp corners, and other hazards in the car's interior.

In addition to these packaging improvements, better brakes and outside mirrors were recommended.

One M.D. suggested that safety features should be "built in," not sold as "extras."

The physicians also said they believed many highway accidents could be prevented by compulsory driving training courses in all high schools; improved licensing procedures, including periodic physical examinations of drivers by physicians; uniform highway marking systems, and more stringent enforcement of traffic regulations.

There was one suggestion that every effort be made to devise a test to predict driver behavior. This physician said, "Many persons driving on the highways today are neither physically nor mentally fit to drive."

The survey was made by *The American Medical Association News*, a newspaper published for physicians.

The A.M.A., the National Safety Council, and the U.S. Public Health Service currently are engaged in a study of ways to educate the public to the advantages of seat belts. A year-long pilot program was begun last February in Fort Wayne, Ind., with the cooperation of local groups, to determine techniques a community can use to encourage the use of seat belts.

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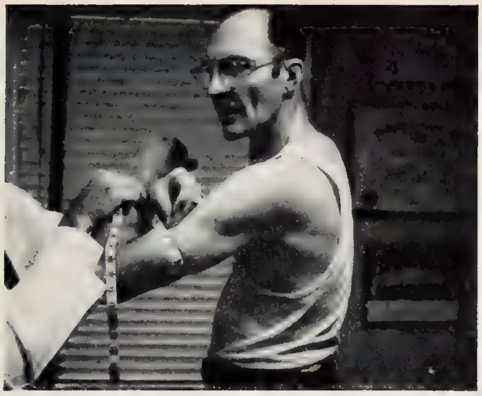

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Eye's Sensitivity to Glare Increases After 40

The effect of glare on vision increases sharply after the age of 40, according to an article in the October *Archives of Ophthalmology*, published by the American Medical Association.

Ernst Wolf, Ph.D., Boston, reported on a study of glare and age in more than 200 persons ranging from 5 to 85 years old.

The visibility of objects is reduced in the presence of glare, particularly in the vicinity of a blinding glare source, he said. To overcome the loss in visibility the contrast between figure and ground must be enhanced, or the size of the object seen must be increased, he said.

In his study, the illumination of the object was increased.

"This increase necessary for the recognition of the targets becomes progressively greater as age increases," Dr. Wolf reported.

"Comparing individuals in the age range between 5 and 15 years with those in the range between 75 and 85 years, a 50 to 70 fold increase in target screen luminance is necessary for the latter group as compared with the former.

"At the age of 40 years a sudden acceleration in sensitivity to glare occurs."

Since glare varies with age, he said, it is apparent that the phenomenon occurs within the eye. Studies suggest that the increased opacity of the lens which develops with advancing age and the resulting scatter of light within the eye "is primarily responsible for the phenomenon of glare," he said.

New Approach Described to Physical Rehabilitation

A new approach to the physical rehabilitation of brain-injured children which does away with braces and crutches has brought "encouraging results," according to a Philadelphia medical group.

A two-year study of 76 children from 1 to 9 years old with severe brain injuries is reported in the Sept. 17 *Journal of the American Medical Association.*

A program was worked out for each child and taught to the parents who carried out the program at home. The patients were seen every two months at the Rehabilitation Center at Philadelphia.

Emphasis was placed on permitting the child to stay on the floor—the normal child's "athletic field"—where he would have an opportunity to achieve the functions related to the undamaged part of the brain.

All nonwalking children were required to spend all day on the floor and encouraged to crawl or creep. They were removed from the floor only for meals, to be loved or to be treated.

When a child reached the stage when his injury prevented him from advancing, exercise were begun

(Continued on Page 82)

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The reasons are not hard to find. Miltown is a ***known*** drug. Its few side effects have been fully reported. ***There are no surprises in store for either the patient or the physician.***

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Extra Chromosome Found in Mental Retardation Case

Forty-seven chromosomes, one more than normal, have been found in a mentally-retarded 21-year-old woman with minor congenital abnormalities, researchers at the Roswell Park Memorial Institute, Buffalo, N. Y., reported in the Sept. 17 *Journal of the American Medical Association.* This was the first description of the finding of an extra chromosome among the six largest chromosomes.

The authors are Avery A. Sandberg, M.D.; Lois H. Crosswhite, B.A., and Edwin Gordy, M.D.

Each normal human being has 46 chromosomes, 22 pairs of autosomes and two sex chromosomes (XX in the female, XY in the male). Half of the chromosomes come from the mother and half from the father at the time of conception. Chromosomes, located in the nucleus of the cell, contain genes which determine hereditary traits.

There have been previous reports of an extra chromosome among the smallest chromosomes in persons with mongolism, a specific type of mental retardation, and of an extra chromosome of medium size in children with congenital defects.

"From the reports that have appeared so far and from the present findings it follows that trisomy [an extra autosome] is associated with various congenital defects, the exact syndrome depending on the chromosomes involved and the resulting impact on over-all genic balance [the distribution of genes]," the researchers said.

"Other chromosomal abnormalities, which may be the cause of, or related to, the many variations seen in mongolism, will probably come to light.

"The extension of chromosomal studies in patients with mental retardation and other congenital anomalies should be of considerable aid in establishing genetic distinction within groups of superficially similar syndromes."

The authors said it had been surmised, on the basis of gene content, that the larger the extra chromosome, the more lethal and complicated the associated abnormalities would be.

However, they said, "the finding in our case would seem to indicate that there may not be any significant correlation between the size of the chromosome involved in trisomy and the extent and number of congenital abnormalities."

In the case reported, the woman's main physical defects were webbing of the skin around the neck and flatness of the back of the head. Her I.Q. was about 40 and she possessed a good memory for certain events and for numbers.

The authors said most authorities seem to favor the view that trisomy is caused by the failure of certain chromosomes to separate during the devel-

(Continued on Page 44)

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Extra Chromosome Found in Mental Retardation Case

(Continued from Page 38)

opment of the sex cells in either parent.

They added that trisomy in itself may not always result in obvious congenital defects.

The *Journal*, commenting editorially on the report, said:

"The relatively simple technique for the determination of the chromosomal constitution in human subjects . . . should be a stimulus to other physicians to undertake similar studies in a variety of hereditary and other types of morbid states. Such studies should include the determination of the chromosomal pattern of parents and siblings.

"An accumulation of such data on a large scale, it is hoped, would ultimately aid the geneticist in the identification of the hereditary nature of such conditions."

Improvement Reported in Stipends For Interns, Residents

Stipends paid interns and residents showed improvement in many of the nation's hospitals during the year ended June 30, 1960, a report by the American Medical Association has said.

The report, prepared by the A.M.A. Council on Medical Education and Hospitals, is contained in the Oct. 8 *Journal of the American Medical Association.*

The average cash stipend per intern in hospitals affiliated with medical schools was $166 per month, a seven per cent increase over the previous year. In hospitals not affiliated with medical schools, the average stipend was $207, an increase of four and one-half per cent over the previous year.

In addition to the cash stipend, the report said 74 per cent of the hospitals paid full maintenance

(Continued on Page 50)

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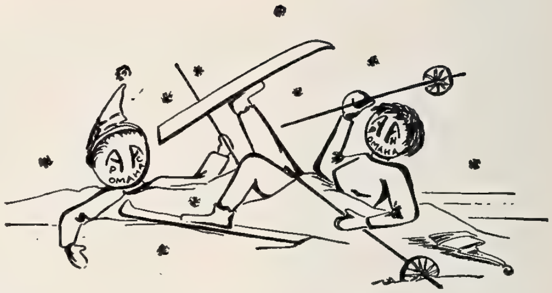

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CLINICAL RESULTS WITH ULO

in 1078 patients observed by 50 U.S. investigators, 46 of whom were chest physicians.

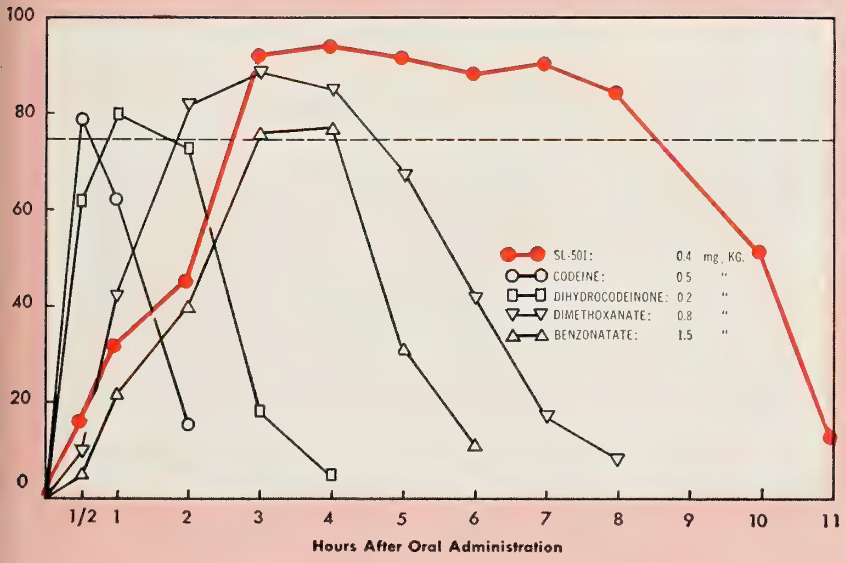
Diagnostic Category	Number of Patients	Results: Good to Excellent	Results: Fair	Results: Poor	Results: Not Specified
Upper Respiratory Infection	521	357	88	57	19
Bronchitis	398	309	42	38	9
Pneumonia	53	44	4	5	0
Postnasal Drip	48	32	9	3	4
Tracheobronchitis	32	23	4	3	2
Croup	14	10	2	2	0
Pleurisy	12	11	0	1	0
Total Patients	**1078**	**786**	**149**	**109**	**34**
Total Patients Benefited			**86.2%**		

Indications

Upper respiratory infections
Common cold
Influenza
Pneumonia
Bronchitis
Tracheitis
Laryngitis
Croup
Pertussis
Pleurisy

4 to 8 hour sustained cough suppression

Comparison of therapeutically equivalent doses of **ULO** and other antitussive agents



Mean per cent inhibition of cough in dogs following oral administration of therapeutically equivalent doses of ULO (SL-501) and other antitussive agents. The horizontal dotted line represents threshold of maximum effectiveness, arbitrarily taken at 75 per cent suppression of counted coughs. Note that the duration of maximum effectiveness of a single dose of ULO is 6 hours, 24 times as long as that of codeine. Peak effectiveness of ULO is not reached until 2 or 3 hours after administration, but the maximum antitussive action lasts at least 6 hours.

Chen, J. Y.; Biller, H. F., and Montgomery, E. G., Jr.: J. Pharmacol. & Exper. Therap. *128*:384, 1960.

Safety

There are no known contraindications. Side effects occur only occasionally and have been mild. Nausea and dizziness have occurred infrequently, vomiting and drowsiness rarely.

Dosage:

Adults: 25 mg. (1 teaspoonful) 3 or 4 times daily as required;

Children: 6 to 12 years of age—12.5 to 25 mg. (½ to 1 teaspoonful) 3 or 4 times daily as required;

2 to 6 years of age—12.5 mg. (½ teaspoonful) 3 or 4 times daily as required.

Availability

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Riker

Northridge, California

Improvement Reported in Stipends For Interns, Residents

(Continued from Page 44)

for unmarried interns, 18 per cent paid partial maintenance while 8 per cent paid none. For the married intern, full maintenance was provided by 52 per cent of the hospitals and partial maintenance by 35 per cent while 13 per cent paid none.

Beginning stipends for residencies also showed improvement.

In affiliated hospitals, the report said 39 per cent of the residencies paid from $101 to $300 per month. In the nonaffiliated group, 41 per cent of the residencies paid from $101 to $350 per month.

A total of 16 residencies paid more than $600 per month, including eight over $700 and two over $950. There were only six residencies over $700 and none over $950, according to the 1958-59 report.

For the 1959-60 academic year, there were 9,457 foreign physicians from 92 countries training in hospitals throughout the United States, the report said. This is a 13 per cent increase over the number reported in the previous year.

The A.M.A. and the Institute of International Education cooperated in taking one census of all interns and residents, including American and foreign graduates.

Six states accepted more than 500 foreign graduates. These were New York with 2,387 or 25 per cent, Ohio with 872 or 9 per cent, Pennsylvania with 619 or 7 per cent, Massachusetts with 573 or 6 per cent, Illinois with 552 or 6 per cent, and New Jersey with 502 or 5 per cent.

The number of foreign interns and residents is expected to decline during the 1960-61 academic year as a result of the policy requiring them to be certified by the Educational Council for Foreign Medical Graduates (ECFMG) after Dec. 31, 1960, the report pointed out.

"It has been estimated that possibly as many as 15 per cent of foreign physicians who were in this country during 1959 to 1960 may be required to return to their homelands as a result of failing to secure ECFMG certification," the report said adding:

"It is the general feeling of informed authorities that the decrease in the total number of foreign graduates available for internships and residencies will be temporary."

The report also revealed that pilot programs have been established at three hospitals for training graduates in "family practice." These new two-year programs are being offered at Indiana University Medical Center, Indianapolis, University of Kansas Medical Center, Kansas City, and Baltimore City Hospital, Baltimore.

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The Role of Government in Medicine

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• On the fundamental question of how far a government should be involved in health services, the author believes these things can appropriately be said: The government should continue to assume complete control over public health measures, and public health officials could well be permitted to invade medical services insofar as is necessary to achieve public health ends.

To assist in the production of medical personnel, it is also fitting for the government to provide for increased teaching facilities, higher salaries for teachers in the medical field and scholarships for worthy students.

In the area of insurance and prepayment plans, a really intelligent supervision of such devices, with the exercise of no more arbitrary governmental power than is now used by the various other regulatory commissions, is a suitable governmental function. The government's buying policies for its wards, rather than providing direct medical services for them, should be encouraged. This would give the private practice of medicine a boost and would improve the quality of medical care. Government should encourage the regionalization of medical services with as much of the actual controls exercised at the local level as can be achieved. Private means should be utilized for the provision of these services and public means should be used for their payment when this is an obligation of the government.

The problem of mass education in health matters should be tackled by government. It would be a fine thing if the medical profession and governmental agencies could agree upon delineation of their respective roles in the health field.

Because further experimentation is needed before the ideal solution is found, both government and organized medicine should encourage the exploration of new approaches.

THE HEALTH of the people is a proper concern of government. This has always been true. But now, when it is demonstrable that the death rate, the life expectancy and the incidence of many diseases are all proportional to the efforts and expenditures put forth, the responsibility is inescapable. Everywhere the people demand that they be provided with these benefits. It has now become accepted that access to health services of high quality is a fundamental right which government must guarantee if the individual is unable to do so. The result of this demand has been to bring socialized medicine to most of the great countries of the world.

In America we have achieved a high level of health without complete governmental control, although, to be sure, with a considerable degree of governmental participation. Deciding the exact extent of this participation is a matter of great national importance, and at this moment a matter of great political expediency as well. The solution of the problem constitutes a great and urgent challenge. Some attempts to meet this challenge will be made in this paper.

EFFORTS OF INDIVIDUALS

The individual's own effort is the most important single element in the preservation and promotion of his health. But if his effort is to be effectual, it must be intelligent and well informed. To see that he is so

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Presidential Address for the American Association of Medical Clinics at their Annual Meeting in New Orleans, October 5 to 8, 1960. Submitted October 19, 1960.

informed is a proper governmental function. I would therefore propose that in the schools, over the radio and television, and by means of pamphlets and books, a campaign be instituted under the direction of the Department of Health, Education, and Welfare to make America the best educated nation in matters of health. Such well-informed people will take proper care of themselves and will make intelligent demands upon government. The educational campaign should stress the importance of individual responsibility for provision of health services for himself and for his family. The great role played by preventive medical measures should receive emphasis in order to enlist public support for proper public health measures and for proper salaries for public health workers. People should be told what they can do for themselves by personal prophylaxis, immunizations, routine physical checkups, cancer checkups and all the many things people can do for themselves before they ask for governmental aid.

PROVISION OF MEDICAL PERSONNEL

Coal cannot be mined without coal miners. Medical services cannot be provided without medical personnel. There is a shortage of medical personnel at every level. The increased demand for medical services and the competitive attractiveness of industry and business for qualified personnel have joined to bring about an acute shortage of physicians, nurses and technicians of every kind. This shortage cannot be met without governmental aid, and in view of the social importance of a trained body of medical personnel it is entirely proper that government should assume the responsibility for providing the help.

There are various things that should be done. Aid to educational institutions in the form of direct grants for building and equipment in order that facilities be expanded is perhaps the most urgent. Grants to supplement the inadequate salaries of professors would keep competent men in teaching who are being lost to the more lucrative field of practice. And big enough scholarships to prospective students to enable any qualified boy or girl who has the motivation to go into one of the medical or paramedical professions would be in order. This device might well be used to divert young people from the farms where fewer and fewer workers are needed, or from industries where automation is resulting in technological unemployment. In this great, rich country every boy or girl who has the capabilities and the desire should be enabled to study medicine. Many cannot today.

Along with the provision of money for expansion of medical education there is need for a severe reappraisal of our educational methods. The utilization of modern audio-visual methods would greatly increase the output and decrease the cost of producing physicians. In addition, the absurd lengths to which nursing education has gone should be reexamined. The whole matter of the production of properly trained paramedical personnel needs a great deal of attention by both government and private educational institutions.

RESPONSIBILITY FOR RESEARCH

The present state of our health has resulted from research. Its future progress depends on research. Government has done much to encourage this through the grants from the National Institutes of Health. This program should be continued and extended.

But dollars are not enough. Again, there is a shortage of trained people. The creation of an elite, dedicated corps of research men and women might be accomplished if the present incomes of research scientists were supplemented by effective grants to stay in effect so long as the individual continued in research, regardless of whether he worked in foundations, in schools or in industry. Put the money into projects, yes, but, more importantly, put the money into people. Encourage as much of this research as possible to be done in private institutions.

Every town of 25,000 people or more should have a medical research institute so that any physician who has a bright idea, even though in practice, may have a chance to implement it. The possible dividends are staggering—a cure for cancer, a preventive of arteriosclerosis would have immeasurable financial value. It would be perfectly proper for the government to provide matching funds, as is now done in other fields, for the establishment of these small peripheral research institutions. If there is considerable local interest in raising matching money on a philanthropic basis, the government should see to it that matching funds are made available for construction and a certain amount as well for maintenance after the institution has been founded. The encouragement of research in this way is an appropriate function of government and such a plan should be instituted as a supplement to the already well advanced programs of medical research.

PUBLIC HEALTH MEASURES

There is no real dissent from the notion that government should assume control of so-called public health measures, but, brilliant though the achievements in this field have been, much more needs to be done. Particularly, the salaries of people in this field should be raised so that there exists some motivation in addition to the dedication that has characterized people in this field. There still exist perhaps fifteen diseases which could be eliminated by the application of principles already known and proven. That this condition persists is a reflection upon our intelligence as a nation. So, strengthen the entire public health services at every level.

Because of improved communication and transportation, narrow parochialism in public health measures and organization should be abandoned. There should be a completely coordinated system from the community level clear to the federal level, and states and communities should be willing to abandon enough of their autonomy to make this country-wide public health service effective.

PROVISION OF MEDICAL SERVICES

The real dissent comes in the provision of medical services in the strict sense of patient care. It is on this point that the cry of "socialized medicine" is raised and the most bitter controversy occurs. There are those who affirm that any intrusion of government into patient care destroys the physician-patient relationship and degrades the quality of medical care. And, on the other side, there are those who say that the government cannot stand by idly while people die or suffer from untreated disease. If a proper solution or resolution of this problem can be found, the "render unto Caesar" boundary may be delineated.

It is well to realize at the outset that government is already deeply involved in the provision of medical services. If one includes the beds for the mentally ill, 70 per cent of the hospital beds now available are government beds. Of the 20 billion dollar bill for all health services, at least 4 billion is paid by government dollars. Indeed, there are certain areas where there is no dissent from the present assumption of patient care by government. The care of military personnel of course is one of these. And on the civilian side, the care of the mentally ill, at first assumed by governmental agencies as a matter of necessity, is now accepted pretty generally. And there is little criticism of community care of indigents, the tuberculous and, to some extent, of persons with certain communicable diseases. But further encroachment, such as the tremendous veterans' program, the care of the dependents of military personnel, and now the care of the aged ill, has aroused desperate controversy. And even more resentment has been developed against systems of nationwide government-sponsored health insurance. Indeed, a solution is urgently needed. What to do?

FINANCING OF MEDICAL SERVICES

The last twenty years has seen a great change in the financing of medical services in the unprecedented growth of various forms of health and hospital insurance. The "status quo" position affirms that if this process is encouraged and not smothered by government interference, it will solve the problems in time. The opponents stress the inadequacy of the present plans, their incompleteness, their excessive overhead and their prohibitive costs as reasons for governmental intervention.

I believe that it is fair to say that most people want medical services on a prepaid or insurance basis and that most of them are not completely satisfied with the coverage now available. There is an area for governmental supervision and an area for private enterprise. In view of the extent and importance of this field, it would be appropriate for a federal health insurance commission to be set up and given supervisory powers similar to those of the Interstate Commerce Commission and the Federal Aviation Commission. This commission might well set up the criteria that acceptable health insurance plans would have to meet; it might even design the ideal policy, could set up regulations limiting the commission and the overhead that might be charged and, in general, bring order out of the present chaos.

When and if a proper prepaid plan in private hands is developed, then various components of government might well try policies, in behalf of these groups for which it assumes responsibility, rather than the provision of services. Let the veterans be given adequate prepaid policies, let the same be done for military dependents and the same for indigents. Let the services be provided by private sources rather than by salaried governmental employees.

Organized medicine, private physicians, solo practitioners and group practice clinics should intensify their efforts to solve this problem. The widest variety of experimentation should be encouraged. The forces of organized medicine would do well to cease their hostility toward groups that attempt their own solutions. A spirit of tolerance should prevail, with intolerance only for poor quality of medical services. Particularly, the great potential of private medical groups to solve this problem should be recognized and encouraged. A proper group giving direct prepayment services to its own group of patients is the most efficient and generally satisfactory device for providing medical services of high quality on a prepaid basis.

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Idiopathic Pulmonary Hemosiderosis

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• Idiopathic pulmonary hemosiderosis is a rare condition manifested by recurrent pulmonary hemorrhage of unknown cause, diffuse radiologic abnormalities, cough, hemoptysis and moderate to severe hypochromic anemia. Diagnosis can be confirmed by iron stains of the sputum or lung aspiration or by biopsy. Prolonged spontaneous remission may occur without the use of corticosteroid therapy. Studies here reported indicated that the anemia is hypochromic and microcytic anemia of blood loss and iron deficiency, in spite of the presence of large amounts of iron in the pulmonary tissue. Correction of the anemia by intensive iron therapy and transfusion is considered an important part of therapy.

IDIOPATHIC PULMONARY HEMOSIDEROSIS is a rare condition affecting both children and adults. The authors have had opportunity to observe two patients with this condition. One patient had onset of symptoms in his teens and the other in early infancy. A brief review of the literature concerning this interesting condition is presented, together with a description of the cases observed by the authors and some comments concerning the hematological aspects of the disease.

History

In 1850, Virchow[24] first described, in autopsy specimens, a condition of brown induration of the lungs. Ceelen,[7] in 1931, was the first to describe the clinical course of the disease, in two cases, and the observations at autopsy. In 1948, Wylie[27] collected reports of 17 cases from the literature and reported an additional seven. With the exception of one 38-year-old man, the patients in all the 24 cases were children. In 1956, Wynn-Williams and Young[28] collected reports of 50 cases from the literature. Fifteen of the patients were adults, and they added a report of a case in an adult. Since that time, 19 more cases have been reported in the English language literature,[13,17] 11 in adults and eight in children.

Symptoms

Cough and hemoptysis are the predominant pulmonary symptoms. In infants and young children, the blood is swallowed and the manifestation may be in the form of vomited blood or melena. In acute episodes, cyanosis, tachycardia, fever, dyspnea and occasionally jaundice are evident. Clubbing of the fingers is sometimes present, and sometimes pallor consistent with a degree of anemia. The lungs may seem quite normal upon physical examination even in the presence of decided radiologic abnormality.

Roentgenographic Observations

Schaar and Rigler[19] said that hemosiderin can be detected in the lungs by x-ray examination in only two conditions, mitral stenosis and idiopathic pulmonary hemosiderosis. The x-ray findings have been described by Elgenmark and Kjellberg[9] as follows: "Diffuse shadows of increased density scattered more or less all over both lung fields and absolutely independent of the borders of the lobes. In some cases, there is a tendency to become denser at the bases; this cloudiness, however, often alternates with mottling of a mossy appearance in the early stages of the disease, as well as in the remissions. The mottling is the dominating feature."

Fleischner and Berenberg,[10] in 1954, gave the following x-ray description: "Diffuse opacities with reticular design rather than mottled, with emphasis on the flecklike consolidations such as are seen in miliary tuberculosis." It is evident, however, from a perusal of the descriptions given in the published reports that there is no pathognomonic or uniform roentgenographic manifestation. Diffuse or patchy densities, massive consolidations, miliary infiltrations and fine diffuse reticulonodular infiltration have all been described.

Hematology

Anemia is present at some time in all cases although spontaneous remissions may occur (Gluck).[12] The anemia is hypochromic, microcytic, and characteristic of iron deficiency due to chronic loss of blood. Reticulocytosis, hyperbilirubinemia, hyperurobilinogenuria, presence of nucleated erythrocytes in the peripheral blood, occasional positive reaction to a Coombs test and the presence of cold agglutinins have suggested the presence of hemolysis.

Clinical Course of the Disease

The clinical course is characterized by remissions and exacerbations. Anemia may improve spontaneously but the roentgenographic manifestations, once

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Presented before the Section on Internal Medicine at the 89th Annual Session of the California Medical Association, Los Angeles, February 21 to 24, 1960.

abnormal, never return to normal although acute massive infiltrations partially resolve. The prognosis is serious. Soergel,[22] in 1957 in a review of reports of 32 cases collected from the literature which were diagnosed during life, reported that nine of the patients died, ten had active disease, five had residual symptoms and eight were symptom-free at the time of his report. The mean duration in the reported fatal cases was 2.9 years with a range of from five weeks to ten years. Patients who were less than three years of age at the time of onset had a somewhat better prognosis.

Diagnosis

Diagnosis is made by the presence of roentgenographic abnormalities, anemia and evidence of bleeding into the lungs. A number of investigators, however, (Waldenstrom, 1944[25]; Walton and Williams, 1951[26]; Steiner, 1954,[23] and Kushner, 1958[15]) have emphasized that there may be no abnormalities observed on roentgen studies even in the presence of severe anemia. The differential interpretations of the x-ray features should consider miliary tuberculosis, pneumoconiosis, heart failure, periarteritis, sarcoidosis and mitral stenosis. In the earliest reported cases the diagnosis usually was made at autopsy. Nowadays the diagnosis is considered made if typical x-ray features and anemia are present and confirmatory evidence can be obtained by means of the demonstration of hemosiderin-filled macrophages in sputum or in material washed from the stomach, or of hemosiderin-filled macrophages obtained by lung puncture.[11] It is, of course, important to consider other possible causes for the presence of these heart failure cells.

Pathogenesis

The pathogenesis of the disease is, at present, still unknown. Several theories have been advanced: Wylie[27] originally considered this to be an elastic fiber disease. In histologic studies of autopsy specimens he noted capillary stasis and heart failure cells; there were abnormalities in the elastic cells—a decrease in the elastic fibers and thickening of the fibromuscular elements in the intra-alveolar septum. Fibrous tissue was increased and elastic tissue decreased. Wylie believed that this led to a lack of distensibility, with consequent peripheral stasis in the capillary bed, leading to hemorrhage and diapedesis and the presence of hemosiderin. However, he held that since cases have been described in which there were no elastic fiber changes, it is most likely that the elastic fiber changes are not primary but are secondary to the hemorrhagic phenomena.

The second theory, advanced by Steiner,[23] is that the antigen antibody autoimmune mechanism is involved. Offered as supporting evidence is the presence of eosinophilia in the cases reported by Steiner and by Gluck.[12] In Steiner's case, some improvement followed splenectomy. The attacks became less severe and there was less anemia. However, clubbing of the fingers, roentgenographic abnormalities and cyanosis remained.

Bruwer, Kennedy and Edwards,[5] in 1956, also reported an exceptional case in which there was extensive necrotizing arteritis in the small arteries of the lungs, necrotizing arteritis in systemic arteries and active glomerulonephritis.

A third theory of pathogenesis, advanced by Soergel[22] in 1957, is as follows: It has been shown that there are periodic increases of pressure in the lesser circulation. It is possible, therefore, that this increase in pressure may affect the fine anastomotic exchange vessels between the bronchial and the pulmonary circulatory systems which, in pulmonary hypertension, are in a varicose state. Therefore, hemorrhage may occur at the points of arterial-venous anastomosis in the lungs. The cause of the increase in pressure is unknown; in fact, it has not been definitely established that this does occur in this disease.

A fourth possibility, advanced by Propst[16] in 1955, is as follows: Observing that there is an increase in acid mucopolysaccharides within the elastic fibers of the small blood vessels, he postulated that the elastic fibers are thereby weakened, the blood vessels dilate and bleeding by diapedesis occurs. Iron is liberated, and as mucopolysaccharides have a strong affinity for it, the iron becomes encrusted on the elastic fibers. This further weakens the blood vessels and the process extends to larger vessels. The actual cause of the increase in the mucopolysaccharides is unknown.

Treatment

Reports of treatment with splenectomy and with corticosteroids have been published.

Splenectomy: Wylie,[27] in one case, noted some slight improvement after splenectomy. Barlow[1] observed none. Cordeiro[8] reported cure in two cases. However, both patients had associated thrombocytopenia and it is probable that they did not have what is now considered idiopathic pulmonary hemosiderosis. Steiner[23] noted improvement in a case he reported. Thus, in only one of five reported cases of idiopathic pulmonary hemosiderosis in which splenectomy was done was there significant improvement.

Steroid therapy: A number of patients have been treated with corticosteroids. Some improvement was reported in three of them.[4,13,14] In at least five patients,[6,15,18,22] no improvement resulted. In view of the frequency of spontaneous remission, no definite conclusions can be drawn.

CASE 1. The patient, a Caucasian male, was observed to be anemic at the age of 17 when he was examined because of fatigue and pallor. He was given a transfusion of one pint of whole blood, then was treated with iron by mouth and injection. The hemoglobin content did not reach normal levels. A year later he was rejected by the army because of anemia. The first episode of gross hemoptysis occurred at age 20. It lasted two days. X-ray films of chest and sputum studies at that time were reported to show no abnormality. Two years later, wishing to enlist in the army, the patient took double the recommended amounts of iron tablets and "just passed the examination." During his first week of basic training, he started coughing up blood and became fatigued. He was put in Letterman General Hospital and there in a period of a year numerous investigations, including bronchography and bronchoscopy, were carried out. At the end of that time, the patient was discharged from the hospital and from the army with a diagnosis of "ill-defined condition manifested by severe hypochromic anemia; hemoptysis; foamy, greasy stools and bizarre pulmonary appearance of both lower lobes as visualized by x-ray." Thereafter he had several episodes of gross hemoptysis and again became anemic.

He was first seen by the authors in 1952, at the age of 23, because of weakness and anemia. The family history was negative for the presence of either anemia or hemoptysis. One sister had been rejected as a blood donor. For most of his life he had had varying symptoms referrable to the gastrointestinal tract, usually consisting of episodes of vomiting, cramping, abdominal pains and bouts of diarrhea characterized by liquid stools, which were frequently foamy, light in color and foul-smelling.

Upon physical examination the patient was observed to be pale, well-developed and well-nourished. Breath sounds were normal and no rales were heard. Heart sounds were normal except for a faint soft systolic murmur at the apex. Blood pressure was 125/70 mm. of mercury. A summary of the laboratory examinations is shown in Table 1. In the subsequent six months, the patient received two blood transfusions because of increasing anemia. Figure 1 shows typical x-ray films of the chest in this case. Following pronounced hemoptysis, bronchoscopic examination was carried out but no abnormalities were seen in the visible tracheobronchial tree except for fresh blood which appeared to be coming from the right lower lobe bronchus. Roentgenographic films of the entire gastrointestinal tract and an intravenous pyelogram were all within normal limits. No abnormality was seen in a sigmoidoscopic examination. Erythroid hyperplasia was noted in a specimen of bone marrow but otherwise the examination did not help in diagnosis.

TABLE 1.—*Data on Laboratory Tests in Two Cases of Idiopathic Pulmonary Hemosiderosis.*

	Case 1	Case 2
Hemoglobin	5.4 gm.	7.9 gm.
Erythrocytes	3.29 (10^6)	4.89 (10^6)
Packed cell volume	24 per cent	28 per cent
Mean corpuscular hemoglobin	17 mcmg.	16 mcmg.
Mean corpuscular volume	73 cu. microns	57 cu. microns
Mean corpuscular hemoglobin content	23 per cent	28 per cent
Reticulocytes	2.6 per cent; 4.4 per cent	2.8 per cent; 3.8 per cent
Urinalysis	Normal	Normal
Icterus index	3.2 units	....
Serum iron	46 gamma per cent; 34 gamma	....
Total iron binding capacity	499 mcg.	....
Iron saturation	6.8 per cent	....
Glucose tolerance	Normal	Normal
Stool	Occult blood	Occult blood
Sickle cell preparation	....	Negative
Hemoglobin electrophoresis	....	A-A
Prothrombin	100 per cent	80 per cent
Prothrombin consumption	Normal	....

In December, 1952, a diagnosis of idiopathic pulmonary hemosiderosis was considered. In March, 1953, severe hemoptysis occurred, the patient estimating that he had lost at least a pint of bright blood. He continued to raise small amounts of rust-colored sputum which, on microscopic examination, showed large numbers of macrophages containing large amounts of hemosiderin as stained by the Prussian blue reaction (Figure 2). In the ensuing two years, the patient several times had severe hemoptysis associated with sharp decreases in hemoglobin, requiring either oral or parenteral iron therapy. After January, 1955, hemoptysis occurred much less frequently than previously and it was never of such severity as to cause a decrease in hemoglobin content of the circulating blood. The clinical course is summarized in Chart 1. The patient was free of symptoms until August, 1955, when he began complaining of mild, intermittent shortness of breath. The vital capacity was normal. The arm-tongue circulation time was slightly prolonged. An electrocardiogram was interpreted as consistent with left bundle branch block. It was our impression that the patient was not in congestive heart failure and he was treated with mild sedation, which partially ameliorated the symptoms. Nine months later a complete pulmonary function study was carried out at the Cardio-Respiratory Laboratory of the University of Southern California School of Medicine, with the conclusion that the dyspnea could not be accounted for on the basis of the decreased pulmonary function. There was slight desaturation of the arterial oxygen, slight prolongation of circulation time and an abnormal response to the Valsalva maneuver, all suggesting that the dyspnea may have been due to mild cardiac decompensation. The patient, however, continued to do well. He had no cardiac enlargement and digitalization was not required. These factors led us to conclude that he did not have primary cardiac disease. He was last examined on July 8, 1959, following an episode of mild hemoptysis, and no significant changes from the previous conditions were

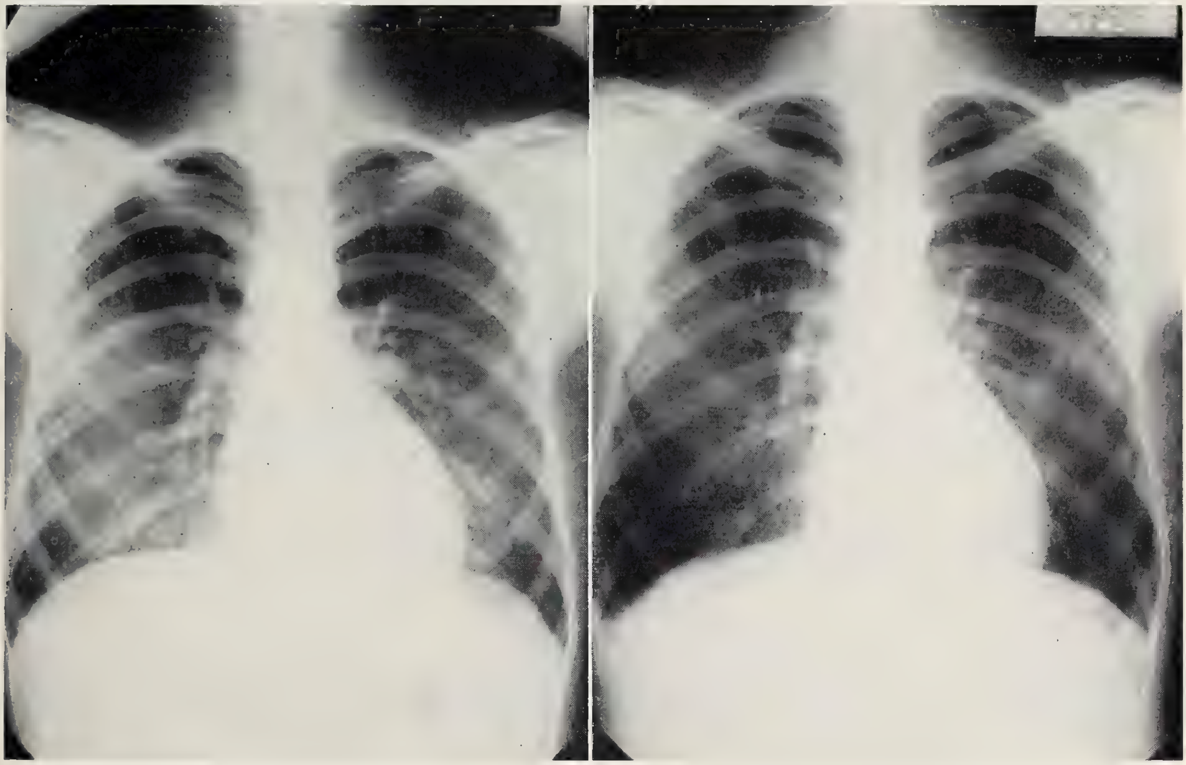

Figure 1.—(Case 1) *Left*, December 11, 1952. There is a very fine reticulated appearance of the lung parenchyma, symmetrical in distribution involving the lower two-thirds of both lung fields. *Right*, July 8, 1959, virtually no change in appearance since previous examination.

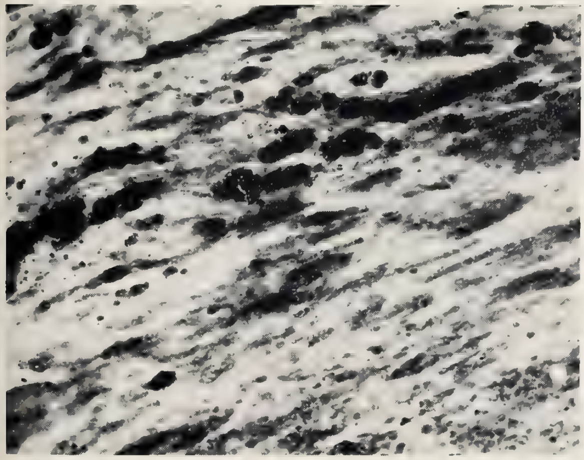

Figure 2.—(Case 1) Specimen of sputum (Prussian blue stain). Large numbers of macrophages loaded with hemosiderin granules are present. ×500.

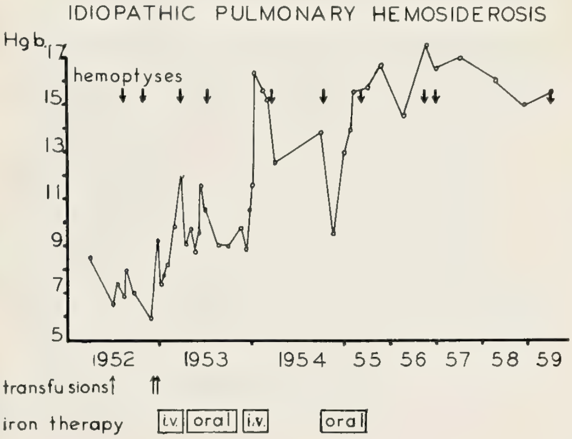

Chart 1.—Serial hemoglobin determination related to hemoptysis and therapy.

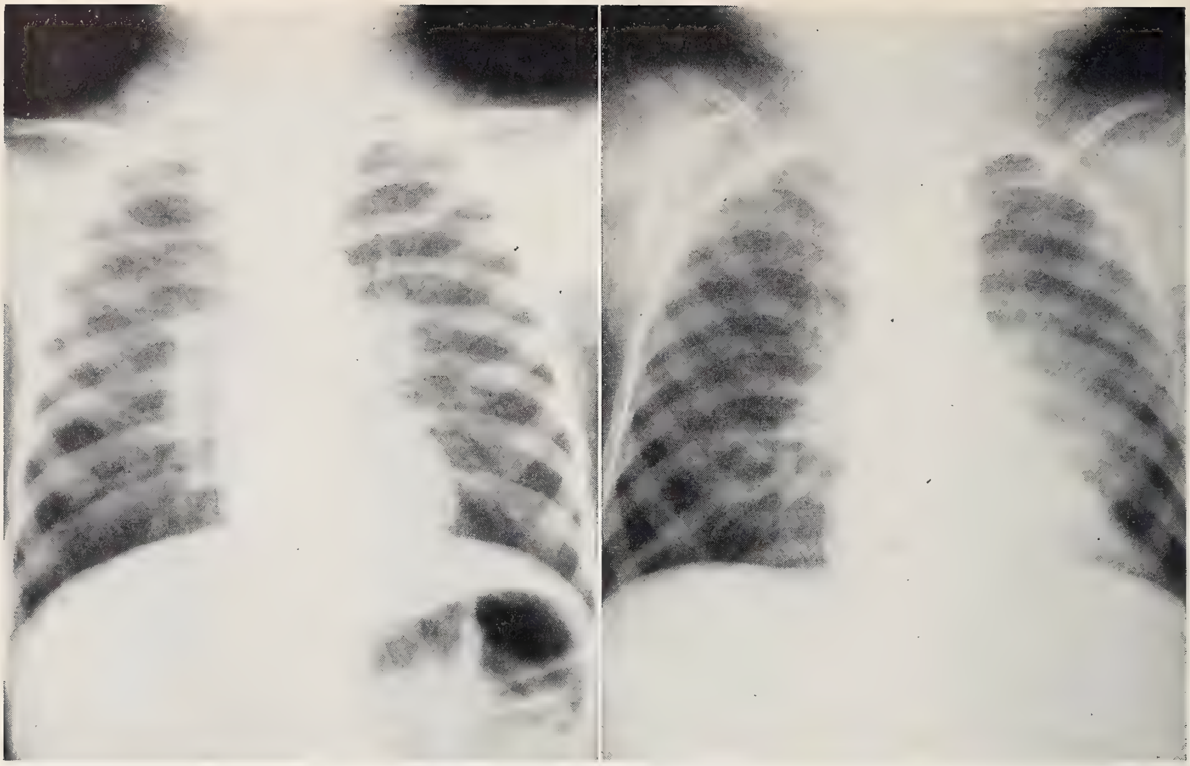

Figure 3.—(Case 2) *Left*, May 26, 1958. There is a non-specific increase in pulmonary markings in the central two-thirds of both lung fields. *Right*, January 7, 1959. There is a homogeneous "ground glass" density in the lower portion of the left hilar complex, probably representing site of recent hemorrhage. The rest of the lung fields show a slight degree of reticulation and fine nodulation.

noted. The hemoglobin content of the blood was within normal limits. X-ray films of the chest were about the same as previous films.

CASE 2. The patient was a Negro boy, 3 years of age when last observed, with a history of normal prenatal course and birth. He weighed 7 pounds 5 ounces at delivery. His mother died of post-partum hemorrhage. The child remained in the hospital for three weeks following birth because of excessive vomiting. He then was well until, at about the age of six months his physical development slowed, his weight increasing only 2 pounds in the next 9 months. He also had repeated respiratory infections, which were treated repeatedly with antibiotics without significant response. By one year of age, the child showed clubbing of the fingers and diminished gluteal mass and he was admitted to Kaiser Foundation Hospital, Los Angeles, for investigation. He was thin and appeared to be chronically ill. The lungs were clear to auscultation. There were no abnormal heart sounds. His physical appearance was typical of fibrocystic disease. It was learned that he had had frequent episodes of coughing and wheezing.

The hemoglobin content ranged from 7.7 to 9.2 gm. per 100 cc. (see Table 1). Examples of typical x-ray films are shown in Figure 3. All other laboratory work, including sickle cell preparation, hemoglobin electrophoresis, gamma globulin determinations, urinalysis, examination of sweat and of duodenal drainage, were within normal limits (Table 1).

The child had been admitted to hospital four more times in the first 15 months of life, at first for diagnostic study because of vomiting and chronic respiratory infection; and large, foul-smelling stools; then because of wheezing. During the stay in hospital at the age of 15 months, the patient had had "coffee ground" vomitus and tarry stools. No abnormalities were seen in x-ray studies of the upper gastrointestinal tract and the colon. Only a slight decrease in hemoglobin occurred at that time, the patient having been treated immediately with transfusions of blood and injection of iron intramuscularly. In January 1959, when the patient was 19 months old, the diagnosis of idiopathic pulmonary hemosiderosis was considered, and material washed from the stomach was observed to contain hemosiderin-filled macrophages. In March, 1959, thoracentesis was carried out and a small amount of pink-tinged material was obtained. On staining, it showed the presence of hemosiderin-filled macrophages. After the procedure a total of 10 cc. of iron dextran* was given intramuscularly. For the next four months, the child had frequent episodes of vomiting of brownish gastric contents, and of passing black, tarry stools. The hemoglobin did not fall below 9.6 gm. per 100 cc. The patient was put in hospital four more times for vomiting, dehydration, fever and "asthma." He was not seen again for a period of six months—until January, 1960. At that time, at age 34 months, he had mumps and again had tarry stools. He was admitted to the Contagious Disease Unit of the Los Angeles County General Hospital. Blood examination there showed mild normochromic anemia (hemoglobin 10.6 gm. per 100 cc.) and a reticulocytosis of 4 per cent. X-ray films of the upper gastrointestinal tract and colon were normal. Melena ceased shortly after admission and no transfusions were necessary. In a telephonic communication with a parent in February, 1960, it was learned that the child was still not thriving and had frequent vomiting and apparent abdominal pain. Also, he had frequent respiratory tract infections.

DISCUSSION

Both cases illustrate characteristics of this syndrome in infants and adults. It is evident that prolonged spontaneous remissions may occur without the use of corticosteroid therapy. From these studies no additional information was obtained to clarify the pathogenesis of the pulmonary bleeding. It is our opinion, however, that the anemia in these cases is classical hypochromic microcytic anemia of iron deficiency due to chronic loss of blood, and that it responds to therapy with either oral or parenteral administration of iron. The paradox of a total body iron deficiency while one organ is overloaded with iron-containing pigment may be explained on the basis that the iron present in the lung is contained in hemosiderin-filled macrophages which are present predominantly in the alveoli or bound by a dense fibrous reaction in the interstitial tissues. This iron is not available for utilization by the bone marrow for hemoglobin synthesis. The laboratory findings of reticulocytosis, erythroid hyperplasia of the bone marrow, and peripheral blood normoblastosis, which suggest hemolysis, can be explained on the basis of response of the bone marrow to acute loss of blood. The increased amounts of bilirubin in the blood and urobilinogen in the urine may result from degradation of the heme pigments following the extravasation of blood into the alveoli. Similar changes, for example, are seen after massive hemorrhage into the pleural or peritoneal cavities or into large connective tissue spaces.

It is our opinion that correction of the anemia by intensive iron therapy and transfusion, when indicated, is an important part of the therapy of these cases.

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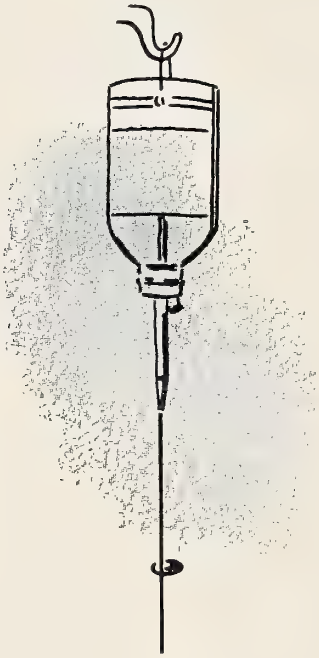

Choledocholithiasis

Correlation of Preoperative with Operative and Postoperative Data to Enhance Diagnostic Insight

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• One hundred cases of common bile duct explorations were reviewed in an attempt to obtain information that might give insight into the diagnosis and definitive treatment of choledocholithiasis. Fifty of the hundred patients had common duct stones. Correlations were made between the incidence of choledocholithiasis as proved at operation, and the following factors: Kind and number of choledochal exploratory criteria used, the clinical diagnosis of common duct stones, and the pathologic features of gallbladders removed.

The incidence of stones was statistically related to aging.

The most frequent choledochal exploratory criteria were common duct dilatation or thickening (63 cases) and history of jaundice (50 cases).

The most reliable single criterion in "diagnosing" common duct stones was palpable common or hepatic duct stones, the diagnosis having been correct in 15 of 17 such cases.

The most reliable combination of criteria was a history of jaundice, plus palpable stones, with correct diagnosis in all such cases.

The clinical diagnosis of choledocholithiasis was correct in only 17 per cent of cases.

The correlation of the incidence of common duct stones with the degree of gallbladder disease—that is, acute or chronic—did not provide information that might be helpful in diagnosing choledocholithiasis.

The incidence of proven retained common duct stones was 3 per cent, the non-fatal postoperative complication rate was 21 per cent and operative mortality was 1 per cent.

Although the first successful exploration of the common bile duct was carried out almost 70 years ago,[6] the problems of surgical operations on the biliary ducts are still perplexing, and of considerable importance. Examining the theories and facts concerning diseases that necessitate exploration of the common bile duct may give additional insight into the diagnosis and effective treatment of common duct diseases.

The preoperative diagnosis of common bile duct stones, as every surgeon knows, can be most difficult, even in the presence of certain well-known signs. For example, painful jaundice, the supposed cardinal sign of the condition, may not always indicate common duct stones. Bartlett and Waddell[3] reported that of 382 patients with a history of jaundice, only 57 per cent had choledochal calculi at operation. A patient with definite history of chills and fever in recurrent cholangitis may be found not to have stones in the common duct. Certainly the type, the intensity and the areas of reference of postprandial biliary colic are helpful in diagnosis in only about half the cases. It has been shown, however, that chronic cholecystitis plus advancing age correlates well with choledochal stone incidence.

About 10 per cent of all patients with cholelithiasis have common bile duct stones.[6] Best (cited by Hicken and co-workers[9]) reported intrahepatic calculi in 7 per cent of cases. The reported incidence of choledocholithiasis with choledochostomy varies from 34 per cent (McLaughlin and Kleager, cited by Glenn[6]) to 83 per cent (O'Shea, cited by Strohl and co-workers.[17])

Definitive surgical cure of choledocholithiasis, with the frequent concomitant of cholecystitis, is often difficult. In an appreciable proportion of patients, choledochostomy for suspected calculi is fraught with such complications as stricture of the common bile duct, external or internal biliary fistulae and "postcholecystectomy syndrome." In addition, common duct stones retained after choledochostomy present problems, and operative mortality may reach significant proportions.

Benign stricture of the choledochus is rare, and biliary fistula requiring definitive treatment occurs in less than 1 per cent of cases. The incidence of retained bile duct stones after choledochostomy is variously reported—at 3.3 per cent of 96 cases by McKittrick and Wilson,[14] at 11 per cent of 106 cases by Thomson[19] and at 20 per cent of 550 cases by Hicken and co-workers.[9]

The operative mortality for choledochostomy has been documented by Glenn[8] at 2.5 per cent (499 cases), and for choledochostomy plus cholecystectomy as 1.8 per cent (963 cases) by Bartlett and

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Quinby,[1] who also reported the incidence of nonfatal postoperative complications at 9.8 per cent. Finally, "postcholecystectomy syndrome" occurs with a frequency varying with the indications used for cholecystectomy.

How cholelithiasis comes about is not fully known. It appears that the consensus of evidence indicates a sequence of bile stasis, then bile concentration, precipitation of sediment and stone formation. Probably related to producing this sequence are factors such as diet, advancing age, obesity, biliary autonomic dysfunction and decreased liver function. Factors contributing to the development of cholecystitis include calculous obstruction of the cystic duct, bacterial cholecystitis (probably secondary) and "regurgitant" pancreatitis. Common bile duct stones are considered mainly of cholecystic origin, either as small calculi or as larger stones that have passed through a dilated cystic duct, or both.

In canine experimentation, Cole, Novak and Hughes[5] observed that partial obstruction of the cystic duct almost always brought about (in eight to ten months) chronic cholecystitis histologically identical to that of humans. A 6 per cent incidence of cholelithiasis was also noted. In a similar work, Picula and Dunphy[16] noted that cholelithiasis developed in five of thirteen animals after partial stenosis of the common bile duct with cellophane wrap. They noted also that the dogs not forming calculi did not have jaundice, but had relatively higher serum alkaline phosphatase than did the animals that did have stones. Imamoglu, Perry and Wangensteen,[11] using a different technique for choledochal stenosis, observed that cholelithiasis developed in seven of eight rabbits (in four to twenty-two weeks), only one of which had a slightly elevated serum bilirubin.

Acute cholecystitis was produced by cystic duct ligation and division in dogs that had a preoperative increase of cholic acid concentration due to 48 hours of fasting.[18] This bile concentration factor was reported in 1940 by Womack and Bricker (as cited by Cole, Novak and Hughes[5]), who said that bile concentrated to twice the normal amount produced acute cholecystitis, with occasional gangrene, when applied to gallbladder mucosa.

Some interesting etiologic factors concerning cholelithiasis have been reported in British literature by Horn.[10] Analyzing clinical cases of cholelithiasis (783 patients), he observed that in men the incidence of cholelithiasis increased with advancing age. Upon analysis of autopsy material (492 cases) it was noted that 52 per cent of men in the 80-90 age bracket had "asymptomatic" gallstones. In correlating data on age, marital status and parity in female clinical material, Horn noted that the highest incidence of calculi was in married multiparae under age 50, was next highest in married nulliparae and was least in single women. Interestingly, in married women over age 50 the incidence was higher in nulliparae than in multiparae. It was postulated that preclimacteric women have a greater incidence of cholelithiasis than of atherosclerosis, while in preclimacteric males the order is reversed. Horn expressed belief that hormonal factors play an important role in both diseases. Beyond age 50 there is a more equal incidence of cholelithiasis and atherosclerosis and a lessening of the disparity of incidence between the sexes.

The conjecture that diet may be an etiologic factor was shown to have some basis in fact by Morrison.[15] He reported the results of a ten-year controlled study of 100 patients on low-fat, low-cholesterol diets, the controls being 100 patients on unrestricted diets. The incidence of chronic cholecystitis was 1 per cent in the test group and 8 per cent in the control group. Three of eight of the patients in the control group had chronic cholecystitis proven at operation and all eight had cholecystographic evidence of disease. Furthermore, the control patients had evidence of depressed bile concentration of bile salts, plus elevated bile concentration of cholesterol, and elevated total blood cholesterol. Morrison postulated two mechanisms responsible for gallstone formation: (1) high-fat and cholesterol dietary intakes are associated with increased cholesterol content of bile and suppression of bile salt concentration, and (2) suppression of bile salt concentration in the bile causes precipitation of cholesterol and calcium bilirubin pigment, with the production of gallstones. These observations suggest a possible approach to the problem of prevention of biliary calculi.

PRESENT STUDY

Complete hospital records were reviewed of 100 consecutive private patients having common bile duct exploration at the Cottage Hospital, Santa Barbara, California, between 1949 and 1959. Operation was performed by 14 different general surgeons.

The correlations that were of concern in the study included: (1) relationship between age, sex, and common duct stone incidence, (2) correlation of preoperative diagnosis of choledocholithiasis with conditions observed at operation, (3) correlation between common duct stones, and certain pertinent clinical and laboratory data, (4) relationship between common duct calculi and the operative, gross and microscopic observations of the gallbladders and stones removed at operation.

An analysis of the following important factors was also done: retained common duct calculi, nonfatal postoperative complications, operative mortality and follow-up observation of patients.

TABLE 1.—*Criteria Used as Basis for Common Duct Exploration*

	Total (100 Cases)	Common Duct Stones Found (50 Cases)	Common Duct Stones Not Found (50 Cases)
1. Common duct dilatation and/or thickening	63	38	25
2. History of jaundice	50	26	24
3. Dilated cystic duct with/or without small stones	28	14	14
4. Palpable stones in common or hepatic ducts	17	15	2
5. Palpable "nodularity" in pancreas	18	8	10
6. Technical reasons	11	6	5
7. No reason given	1	1	0

RESULTS

Of the 100 patients, 66 were women and 34 men. The age range was 19-84. Seventy-three patients were over and 27 were less than 50 years of age.

Each of the hundred patients underwent choledochostomy, and 91 had cholecystectomy at the same operation. Of the remaining nine two had had previous cholecystectomy (one of them three weeks and the other four months before), three had cystic duct remnants, two had had previous cholecystectomy (two weeks, and three weeks before), plus primary choledochostomy at other hospitals, one had had a previous cholecystostomy (three weeks before) and one had had cholecystostomy plus gallbladder biopsy and choledochostomy.

Fifty of the patients had common duct stones at the time they were first operated on. Fifty-six per cent of the women and 38 per cent of the men had choledocholithiasis. There was a proportional relationship between the incidence of common duct calculi and advancing age in both sexes.

Correlating of the preoperative diagnosis of common duct stones with the observation of common duct stones at operation showed correct preoperative diagnosis in 17 cases. This diagnosis had been entertained as a possibility in other cases, of course. In seven of the 100 cases choledocholithiasis was incorrectly diagnosed before operation.

Table 1 summarizes the relationship between the indications on which operation was done and the conditions observed at choledochotomy. From one to four different criteria for exploration were present in all patients who had operation. For example, although 63 of the 100 patients had the criterion of dilatation, and/or thickening of the choledochus, 25 of them did not have common duct calculi. Of 50 patients having a history of jaundice, common duct stones were found in 26. Twenty-eight patients had dilated cystic ducts at operation, and no attempt was made to further subdivide them by putting those who also had small gallbladder stones in one group and those who did not in another. Of the 17 patients with palpable stones in the common or hepatic ducts, 15 actually had choledocholithiasis at exploration, which, however, was only 30 per cent (15 out of 50) of the number who had choledocholithiasis. An expected proportion of patients had palpable nodularity in the head of the pancreas. The criterion of "technical reasons" (Table 1) included the following: in three cases, cystic duct remnants; in three others, strictures of the common duct; and in one case each, external biliary fistula, a palpable "nodule" in the triangle of Calot, postoperative common duct laceration, anomalous hepatic ducts, and calculus demonstrated on operative cholangiography. In one case no indication was evident on a reading of the chart, although a common duct stone was found.

TABLE 2.—*Numbers of Criteria Used as Basis for Common Duct Explorations*

	Total (100 Cases)	Common Duct Stones Found (50 Cases)	Common Duct Stones Not Found (50 Cases)
One criterion	41	13	28
Two criteria	34	19	15
Three criteria	18	12	6
Four criteria	6	5	1
No criteria stated	1	1	0

On grouping the cases (Table 2) according to whether there were one, two, three or four criteria for choledochal operation, it was noted that in 28 of 42 cases in which there was a but a single "reason" for common duct exploration, stones were not found in the choledochus. But progressively as the number of criteria for operation increased, the proportion of cases with stones also increased. In five of six cases in which there were four criteria, stones were present.

TABLE 3.—*Additional Clinical and Laboratory Data*

	Total (100 Cases)	Common Duct Stones Found (50 Cases)	Common Duct Stones Not Found (50 Cases)
1. History of biliary colic	89	46	43
2. History of chills and fever	13	8	5
3. WBC count above 10,000	24	9	15
4. Icterus (laboratory)	27	15	12
5. Elevated serum amylase	6	3	3

Pertinent clinical and laboratory data are shown in Table 3. Eighty-nine of the 100 patients had a history interpreted as definite for biliary colic. Twenty-seven were jaundiced on hospital admission and laboratory studies corroborated the observation. Twelve of the 27, however, did not have stones in the common duct.

TABLE 4.—Correlation of Clinical Diagnosis of Choledocholithiasis with Operative Diagnosis

Clinical diagnosis made and common duct stones found	17 of 50 cases (34 per cent correct)
Clinical diagnosis made and common duct stones not found	7 of 50 cases (14 per cent correct)

TABLE 5.—Correlation of "Positive" Choledochotomy (Common Duct Stones Found) with Pathologic State of Gallbladder (50 Cases)

Acute Cholecystitis Group (6 total)	
Acute inflammation with stones	4
Sub-acute inflammation with stones	1
Acute inflammation with recent perforation	1
Chronic Cholecystitis Group (43 total)	
Chronic inflammation with stones	36
Acute and chronic inflammation with stones	3
Chronic inflammation without stones	2
Chronic inflammation plus cholesterolosis with stones	1
Cholesterolosis	1
Other Disease	
Chronic inflammation of cystic duct remnant	1

TABLE 6.—Correlation of "Negative" Choledochotomy (Common Duct Stones Not Found) with Pathologic State of Gallbladder (49 Cases)*

Acute Cholecystitis Group (5 total)	
Acute inflammation with stones	3
Acute inflammation without stones	2
Chronic Cholecystitic Group (42 total)	
Chronic inflammation with stones	33
Acute and chronic inflammation with stones	4
Chronic inflammation without stones	3
Chronic inflammation plus cholesterolosis with stones	2
Other Disease	
Acute inflammation of cystic duct remnant	1
Chronic periductal inflammation of cystic duct remnant	1

*Pathologic report not available in one case.

Correlation of the clinical diagnosis of choledocholithiasis with the operative diagnosis is shown in Table 4.

Next, the relationship between choledocholithiasis and pathologic studies of the gallbladder (gross and microscopic, after cholecystectomy) was analyzed. A final pathologic report was available in 99 cases. Certain histologic material was reviewed, when indicated.

According to the conditions observed at pathologic study of the gallbladders or cystic duct remnants removed at operation, the cases were classified in three groups—acute cholecystitis, chronic cholecystitis and "other disease." The incidence of these classifications in the patients who had stones and in those who did not have stones was about equal. (Tables 5 and 6.)

TABLE 7.—Data on Retained Common Duct Stones After Operation

Cholangiogram Diagnosis (Minimally suspected)		11
Clinical and Cholangiogram Diagnosis		
Proven or strongly suspected		6
Proven at second choledochotomy	3	
Biliary flush treatment (stone apparently passed)	2	
0.6 cm. stone found in T-tube tract at second choledochotomy (equivocal common duct stone)	1	

TABLE 8.—Postoperative Complications (100 cases, 1 to 30 Days), Exclusive of Retained Common Duct Stones

1. Bile drainage around T-tube	8
2. Wound infection	5
3. Hemorrhage	2
4. Bile peritonitis	2
5. Jaundice	1
6. Other—	
Wound dehiscence	1
Right pleural effusion	1
Acute pancreatitis secondary to diodrast cholangiogram	1
Total	21

The types of stones found and the number of cases for each type were: cholesterol, 13; pigment, 13; mixed type, 12; 1 to 2 mm. "sand," 6; not reported, 6.

The problem of retained stones assumed significant proportions. It should be mentioned that in 97 of the 100 cases, an indwelling T-tube was placed in the common bile duct. (In one it was placed in the right hepatic duct, and in one case choledochoduodenostomy also was done.) In most cases without complications the tubes were left in place postoperatively seven to ten days. In two cases straight rubber catheters were sewn in, and one patient had a cholecystostomy drainage tube. Eighty-two patients had T-tube cholangiographic examination during and/or after operation. Patients having evidence of retained choledocholithiasis (Table 7) were divided into two groups: (1) those having only cholangiographic indication of a possible stone (minimally suspected), and (2) those having both cholangiographic and clinical evidence of retained stone (strongly suspected or proven). There were 11 in the former group, and in most of these cases there probably had been intra-ductal air bubbles that made roentgenologic interpretation equivocal. None of these patients was reoperated upon, and all were discharged with satisfactory recovery. There were six cases in the latter group, in three of which reoperation was done and retained stones were found (two within two weeks, and one at three and a half months). In two of these common duct stones were found at the first operation. Of the remaining three patients, two had persistent cholangiographic evidence of a retained stone, and were treated conservatively with a biliary flush regimen, with apparent passage of the calculus and one had four chole-

TABLE 9.—*Data on Mortality and Results of Operation*

Hospital death—	
Pulmonary embolus	1
Delayed death—	
Bile peritonitis at 2 months	1
Biliary cirrhosis at 8 months	1
Death, unrelated causes	14
Patient follow-up, 2 to 11 years (64 cases)—	
Excellent results	66 per cent
Good results	26 per cent
Poor results (including retained common duct stones)	8 per cent

dochal calculi (2 to 3 cm.) at initial operation, and a 0.6 cm. stone was found outside the common duct in a fistulous tract (significance equivocal).

Non-fatal postoperative complications (exclusive of retained common duct stones) occurred in 21 cases (Table 8). The commonest complications were: bile drainage around the T-tube (moderate to profuse)—eight cases, and wound infection—five. No postoperative abdominal abscesses were recorded.

Mortality data and information on patients who were observed for varying periods after operation are given in Table 9. The operative death was due to an unexpected massive pulmonary embolus in a 44-year-old man 12 days postoperatively. Operation had been performed for chronic cholecystitis with stones, and the common duct contained "many" mixed stones up to 1 cm. in diameter. There had also been profuse biliary fistulous drainage around the T-tube before he died. In addition, there were two delayed postoperative deaths, both the result of benign biliary tract complications, one at two months, and one at eight months after operation. The patient who died two months after operation was a 59-year-old woman, who had had a second operation because of a laceration of the choledochus, external biliary fistula, and sub-hepatic abscess. Death was due to bile peritonitis and inanition. The other patient was a 69-year-old woman with chronic cholecystolithiasis and clinical jaundice. Stones had not been found at choledochotomy. Death was due to progressive biliary cirrhosis.

Results in the 73 patients who were observed for periods of two to eleven years were classified as excellent in 66 per cent, good in 26 per cent (with occasional distressing symptoms) and poor in the remainder (retained common duct stones, recurrent postoperative jaundice or severe symptoms).

DISCUSSION

The problem of the validity and relative reliability of choledochal exploratory criteria is one to be reckoned with. Surgeons are probably not justified in exploring every common duct on the basis of any single criterion. Each operative case merits individual decision for choledochal exploration based upon the aggregate of factors found, which will necessarily include appraisal of the operative risk in each case, complicating anatomic factors observed at operation and the number and kind of exploratory criteria observed at the operating table.

As shown in Table 1, our exploratory criteria were six in number. Although dilatation or thickening of the common bile duct was the most frequent exploratory criterion observed (in 63 of 100 cases), it was not as "reliable" as the less frequent criterion of palpable common duct stones (in 17 of 100 cases) in "diagnosing" the actual presence of calculi before choledochotomy. By calculation, the latter criterion was "correct" 88 per cent of the time (in 15 of 17 cases), while the former criterion was 60 per cent reliable (in 38 of 63 cases). History of jaundice and of dilated cystic ducts were both about 50 per cent reliable in this respect. Nodularity in the ampullary-pancreas region was only 44 per cent reliable as an index to the presence of choledocholithiasis.

Regarding the relatively low incidence of palpable common duct stones (15 of 50 cases in which stones were present), it would seem that this should be more frequently observed with careful inspection of the extra-hepatic ductal system. Even so, stones were palpated in the present series in a much higher proportion of cases than the 10 per cent reported by Bartlett and Waddell[3] in a series of 900 cases. The reason for these low incidences is not readily apparent.

The use of the bromsulfalein retention test and the serum alkaline phosphatase test has been found to be valuable in the diagnosis of common duct stones. Culver, McDermott and Jones[4] reported that the differential excretory gradients of these two laboratory indices are a diagnostic aid in problem cases where there is partial biliary obstruction. But even the presence of icterus or a history of it is no guarantee that calculi will be found at choledochostomy. In six of the cases in the present series this singular criterion was the basis for ductal exploration, and no stones were found. Bartlett and Waddell reported the combination of a history of icterus and palpable stones at the operating table was 99 per cent reliable as criterion for choledochal exploration. In the present series this combination was observed in nine cases and in all of them common duct stones were found.

From the foregoing it may be concluded that the kind of criteria used is of more importance than the total numbers of criteria observed. This is attested by data in Table 2, where it may be seen that in 7 of 24 cases having three or more exploratory criteria (without regard to kind) no common duct stones were found.

The reason for our correlation of data on common duct stone incidence with the nature of the pathologic observations on examination of the gallbladder was to answer the question: Which patient is more likely to have common duct stones, one with acute or one with chronic cholecystitis? Admittedly, the series was small, and 73 of the 100 patients were over 50 years of age—hence more likely to have chronic biliary tract disease. Nevertheless the fact that the incidence of the acute disease and of chronic disease was about the same in patients who had common duct stones as in those who did not can be taken as indicative that acuity of disease is not a factor that can be helpful in diagnosing choledocholithiasis. Unfortunately, the clinical diagnosis of choledocholithiasis also was unreliable, since it was correct in only 17 of 50 cases.

We believe that it should be possible to remove all stones present at operation, yet in our series there was retention of stones proven in three cases at a second operation, which corresponds to the incidence reported in 1949 by McKittrick and Wilson[14]—3.3 per cent of 96 cases in which choledochotomy was carried out. The Kirby-Thurston cholelithophone may prove of some value[12] in reducing the frequency of this complication.

No satisfactory explanation is offered for the rather high incidence of bile drainage around the indwelling T-tube in the present series (Table 8). In five of the eight cases in which this occurred the patients had had common duct stones. Other nonfatal postoperative complications in the series did not appear excessive.

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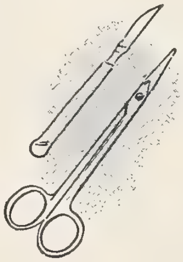

The Aminase Oxidase Inhibitors

Their Current Place in Clinical Medicine

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• Development of the MAO-inhibitors has been an important advance in the treatment of tuberculosis, mental depression, several of the collagen diseases, hypertension and angina pectoris. Treatment must be carefully controlled and individualized. A sufficient number of MAO-inhibitors is available at present to afford ready and correct selection of the proper one for a given patient and disease. Provided such care is observed, treatment is most successful and side effects are few and, as a rule, readily corrected.

SINCE 1952 when Zeller and others[10] described the pronounced inhibition of monoamine oxidase by iproniazid, this substance and its analogues have been used in the treatment of a wide variety of conditions. In a number of these, there is understanding of some of the biochemical and pharmacologic actions which occur, but in others we cannot as yet rationally explain why improvement appears. In this communication we shall briefly summarize present knowledge of these drugs and relate some of our experiences with them in the treatment of angina pectoris. We shall discuss only those monoamine oxidase inhibitors (MAO-inhibitors) which are hydrazine derivatives.

Although these agents are known to exert their effects on enzymes other than monoamine oxidase (e.g., diamine oxidase), most of our knowledge stems from studies of monoamine oxidase. This substance is contained primarily in cell mitochondria and has been found in most tissues of the body. It is apparently inhibited by the alkylhydrazine component of the inhibitors,[11] permitting build-up of some of the amines and potentiation of their effects. Interference with the liver enzymes which ordinarily detoxify certain drugs causes the action of these drugs, too, to be prolonged.[2]

The biochemical and pharmacologic results of amine oxidase inhibition may be summarized briefly as follows:

(a) *Serotonin metabolism:* Brain serotonin levels are increased by the administration of these agents, the highest level usually being attained 3 to 5 hours after administration; repeated administration of the inhibitors does not raise brain levels over those achieved with a single dose. No increase of serotonin can be demonstrated in the blood, stomach or intestines after use of iproniazid.

(b) *Epinephrine and norepinephrine:* Apparently the primary effects of the MAO-inhibitors (as exemplified by iproniazid) are not on these two amines but on their metabolites, as demonstrated by reversal of the normal urinary excretion ratio of the metabolites of methyl-labeled epinephrine. The inhibitors apparently exert their effect on the products of O-methylation of these amines.

(c) *Adrenochrome and adrenolutin metabolism:* It has been noted that patients who suffer from anxiety or tension destroy adrenochrome more rapidly than do normal subjects. Following administration of adrenochrome and adrenolutin, anxiety steadily decreases. It is thought possible, therefore, that some of the euphoria noted in patients receiving iproniazid may be related to a diversion of epinephrine or methoxyepinephrine to adrenochrome or its derivatives.

(d) *Effects on other amines:* Other amines which are affected by monoamine oxidase inhibition include dopamine (which may play a more important role in the action of monoamine oxidase inhibition than does serotonin), tyramine and tryptamine. The last, which lacks a major alternate pathway of breakdown, accumulates in large amounts following monoamine oxidase inhibition, and urinary tryptamine excretion increases. This reflects monoamine oxidase inhibition throughout the body and hence affords a relatively simple measure of such inhibition.

The MAO-inhibitor used most widely has been iproniazid, initially employed for bacteriostatic and bactericidal effects on the tubercle bacillus. It soon became apparent that the large dose needed for effective control is accompanied by a high incidence of side-effects. Iproniazid was noted to cause weight gain in emaciated and debilitated patients, relief of pain, reduction of local edema and heat, and reduction in body temperature. It was also observed that the tendency toward wound healing of mesodermal tissues is out of proportion to any influence

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of the chemical on the tubercle bacillus alone. Finally, it was seen that in these patients depression was replaced by mood elevation. In the eight years since the first observations were published, hundreds of MAO-inhibitors have been synthesized. Attempts have been made to modify the chemical structure of these preparations in such a manner that the primary effects are directed toward the brain, the heart or other organs. The agents which are now commercially available are listed in Table 1, together with their customary initial and maintenance doses. An additional agent not yet commercially available, pivalylbenzhydrazine, is included in the table.

TABLE 1

Compound	Average Daily Dose (mg)	Range of Daily Dose (mg)
Iproniazid (Marsilid®)	50	10-150
Isocarboxazid (Marplan®)	15	10- 30
B-Phenylisopropylhydrazine (Catron®)	12.5	9- 25
Phenelzine (Nardil®)	45	Up to 120
Nialamide (Niamid®)	75	Up to 150
Pivalylbenzhydrazine (Tersavid®)	75	50-200

In complete contradistinction to the others noted here, pivalylbenzhydrazine does not have any mood-alleviating effect in the vast majority of patients.[9] This has proved to be of considerable value in our understanding of the mechanisms and uses of these drugs.

At present, the monoamine oxidase inhibitors are employed in the treatment of tuberculosis of all kinds, in the psychiatric treatment of hypoactive and depressed patients, in angina pectoris, in a miscellany of gastrointestinal disturbances, and in rheumatoid arthritis, rheumatoid spondylitis, lupus erythematosus, systemic sclerosis, Raynaud's phenomena, dermatomyositis, narcotic addiction, acne vulgaris and psoriasis, and in the pain of malignant disease. Multiple sclerosis has been reported to worsen under iproniazid treatment.

Our particular interest in the use of these compounds has been in the treatment of angina pectoris. Because the efficacy of such therapy is difficult to evaluate, the various factors to consider in the alleviation of this pain with the MAO-inhibitors may include psychic effects, effects on the pain threshold, central nervous system stimulation, ganglion-blocking effects, analgesic effects, oxygen-sparing effects and coronary artery dilation.

The most obvious effect to consider in the use of agents that are powerful mood elevators, would be psychic effect. Undoubtedly this is important, but it has been shown in some studies that effects are greater by far with the use of the MAO-inhibitors than with placebos. Also, we have achieved relief of angina pectoris not only by use of isocarboxazid, which is a mood elevator, but also with pivalylbenzhydrazine, which has little or no effect upon mood. It would appear that while psychic effect undoubtedly is involved, this is not the most important or even a major factor in the anti-anginal action of these drugs.

Associated with the psychic effect is the possibility of raising the pain threshold of a specific patient. Although this may be related to the antidepressant activity of these agents, in view of the factors already noted, it would not appear likely that this is a major factor.

Several of the MAO-inhibitors have been shown to possess analgesic activity up to the efficacy of codeine.[1] Although this analgesic activity may be important under certain conditions, particularly when mesenchymal tissues are involved, we do not feel that it is the most important factor in the effects of these agents in prophylaxis against angina pectoris.

As important or more important than the analgesic effect is central nervous system stimulation. The feeling of well-being and increased drive that these patients frequently obtain certainly is related to central nervous system stimulation. Many of the patients we have treated have been impressed with the fact that they did not realize some degree of depression was present until they had received these drugs and observed improvement.

Because many of the side effects in the use of monoamine oxidase inhibitors resemble those due to ganglion-blocking agents, it has been postulated that part of the effect of the monoamine oxidase inhibitors in relieving angina may be attributed to ganglionic block. It has been found, however, that the inhibitors block ganglia only if perfused directly through isolated ganglia and not otherwise.[3]

Severe infarct-like myocardial necrosis has been observed to follow the use of epinephrine and norepinephrine in man and animals. This necrosis probably is due to increased oxygen consumption and drop in blood pressure under these conditions. In animals that have been pre-treated with isocarboxazid and then have received intraperitoneal injection of isopropylarterenol, necrosis is much less severe. This has been interpreted as evidence of an oxygen-sparing effect, probably related to interference in some oxidative processes.[12]

One final pathway of investigation is that of possible coronary dilation. This has been shown to occur both in the isolated heart and in the intact animal. Several circumstances make it unlikely that coronary dilation is of great significance in the clinical use of these agents. In the first place, the pain that is relieved in these patients is chronic, and it is difficult to visualize how the periods of brief coronary dilation demonstrated in experimental procedures can benefit a chronic condition. Also, it is difficult to see how the calcified vessels of patients with far advanced coronary arteriosclerosis can be dilated.

As far as the cardiovascular effects of the MAO-inhibitors are concerned, the most significant clinical considerations to date have been in relation to blood pressure, peripheral vascular disease and the anginal syndrome.

The MAO-inhibitors are known to lower blood pressure. In view of the dangers of physical injury from falls attributable to hypotension, especially in elderly persons, there has been some tendency to withhold these agents. In addition, there is the possibility of precipitation of cerebrovascular accidents secondary to hypotension. It is evident that clinicians will be divided, those who will withhold the agent because of possible bad effects, and those who will administer it for its benefits. We agree in general with the second group and do not hesitate to use these agents where indicated, although cautiously, despite the presence of cerebrovascular disease.

It has been suggested[8] that these agents may be contraindicated in patients with low blood pressure. In our experience not often is there a significant drop in blood pressure provided the patients are treated cautiously and conservatively and if, in patients of this particular type, the drug is given by gradually increasing doses, starting at low levels and working up to therapeutic effect. Pivalylbenzhydrazine has not been observed to cause orthostatic hypotension in any of our patients.

These drugs have had a trial as anti-hypertensive agents, both alone and in combination with diuretics, notably chlorothiazide. The results have been good in general, and studies reported[4,5,6,8] have indicated that significant hypotension may occur, both orthostatic and supine. These effects are so striking that the dosage of other anti-hypertensive medication must be greatly reduced while taking the MAO-inhibitors in order to maintain safe blood pressure levels. With this combined therapy, the MAO-inhibitor may permit continual control with once-a-day dosage and thus some of the side effects seen with ganglioplegic agents can be avoided.

The response of patients with intermittent claudication has been somewhat contradictory. In some instances benefit has been observed, in others not. As a rule, patients are able to walk farther but eventually they reach the limit of their tolerance and have a return of pain. Tests of pedal circulation do not show improvement with these preparations. In addition, an interesting phenomenon has been observed: Patients with angina pectoris who have not had intermittent claudication before taking these agents may develop these painful spasms, without any change in blood pressure taking place, simply because once they are relieved of angina pectoris they can walk greater distances than they could before, and they overdo.

The MAO-inhibitors diminish both the intensity and frequency of anginal pain and increase the capacity for exertion; they have been used widely during the past several years, therefore, in the treatment of this condition. We have used iproniazid, isocarboxazid, pivalylbenzhydrazine and, with Dr. Willard J. Zinn, beta-phenylisopropylhydrazine. Our results agree in general with most of those published in the literature. Our patients felt better with medication than they felt before—were more alert, more cheerful and had greater tolerance for activity. Many of them were able to remain gainfully employed or to return to jobs they previously had had to quit.

There is some question as to whether these agents merely afford symptomatic relief, or whether they actually cause an increase in efficiency of the heart muscle. We have already discussed several factors which may be operative.

It is difficult to determine whether the analgesic activity of these compounds is most important, or whether the anti-anginal effect may be due specifically to the rise in pain threshold, to central nervous system stimulation or to psychic effects. The exact role of coronary dilation or oxygen-sparing effects also is uncertain. When these agents were first used, it was believed that the entire anti-anginal effect was owing to the anti-depressant factor, but the development of inhibitors which depressed or had no effect on drive and activity indicates that the psychic element may not be as important as had been thought.

The problem of acute myocardial infarction during MAO-inhibitor therapy must be considered. There is some possibility that masking angina may induce patients to exceed the limits imposed by the circulation to the myocardium, but we know of no patients in our series who have had myocardial infarction so caused. Theoretically, the use of these drugs may improve the chances of survival after myocardial infarction. This concept is based first on the oxygen-sparing effect discussed earlier, and second on the evidence that these agents have an anti-arrhythmic action which may protect against the development of disastrous ventricular arrhythmia during the stage of acute myocardial infarction.[5]

Our own experience has been greatest with isocarboxazid and pivalylbenzhydrazine: isocarboxazid is a potent anti-depressant agent; and pivalylbenzhydrazine has little or no anti-depressant effect. Twenty-five patients were treated with isocarboxazid and 45 with pivalylbenzhydrazine. Results were similar in the two groups. Roughly 75 per cent in each group had some benefit—excellent in approximately 30 per cent, good in 40 per cent and fair in about 5 per cent. The patients in each group were of comparable age distribution. Most had coronary arteriosclerosis with angina pectoris, and a few had aortic valvular disease, either insufficiency or stenosis. We were able to differentiate very clearly in several instances those patients whose angina was induced primarily by psychic stimulation and those who had pain only on physical effort. We were thus able to select the MAO-inhibitor in a rational manner, with gratifying relief of angina.

Side effects during MAO-inhibitor therapy are frequent. Fortunately, most are not serious and are readily avoided or controlled.

The only significant side effect we observed among our patients was the occurrence of severe orthostatic hypotension in several patients receiving iproniazid and one who received isocarboxazid. Where needed for immediate effect, methoxamine was used with benefit. Good results were obtained with cortisone, hydrocortisone or adrenocorticotropin (ACTH). Slight hypotension was controlled by the concomitant administration of amphetamine or amphetamine-like compounds. In none of the patients we treated with pivalylbenzhydrazine did orthostatic hypotension develop.

The development of jaundice or hepatitis has been reported as an infrequent, serious and, on occasion, fatal complication. We did not see it in our patients. Serial studies of hepatic function occasionally showed values outside the normal range, but no more frequently than similar values appeared in tests of hepatic function in patients who were not taking MAO-inhibitors. Without exception the values returned to within normal range during continued therapy.

Among the other complications described are a group of symptoms which has not been a serious problem to us. Included are agitation, periorbital or dependent edema, bladder or bowel dysfunction, hyperreflexia and hyperkinesis or muscle fasciculations, peripheral neuritis (we have not seen this), both increases and decreases in sexual potency and activity, and weight gain. Correction of doses, change to another inhibitor or simple symptomatic treatment generally relieves these symptoms.

Serial laboratory studies including complete blood cell count, urinalysis and hepatic function studies revealed no significant changes in our patients, several of whom were observed for as long as two years.

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Snake Venom Poisoning in Southern California

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• The annual incidence of rattlesnake bite in Southern California is approximately 1 per 75,000 population. The case fatality rate is 1.5 per cent. The snakes implicated in the greatest number of injuries are the southern Pacific rattlesnake, the red diamond rattlesnake and the sidewinder.

Rattlesnake venom produces deleterious changes in the blood cells, defects in blood coagulation, injury to the intimal linings of vessels, damage to the heart muscle, alterations in the respiratory cycle and, to a lesser extent, changes in neuromuscular conduction.

The most frequently observed symptoms and signs following ophidiasis in this area are swelling and edema, pain, ecchymosis, swelling of the regional lymph nodes, weakness, sweating, increased body temperature, faintness, and hemorrhagic vesiculations. First aid treatment consists of immobilization of the affected part, application of a constriction band, incision and suction with subsequent local application of ice packs. Treatment in hospital consists of administration of antivenin, antitetanus agent and antibiotic. Transfusions, oxygen and a corticosteroid may be indicated in some cases.

APPROXIMATELY 50 rattlesnake bites are recorded each year among the nine million residents of the 11 Southern California counties.[11] The total number of bites by these animals in this area is not known but it would appear to be between 60 and 70 a year. The present fatality rate for recorded cases is 1.5 per cent. This figure substantiates that proposed by Klauber,[1] of probably less than 2 per cent. The rattlesnake is the only naturally occurring venomous snake in Southern California. Of the nine species and subspecies common to the area, the southern Pacific rattlesnake, *Crotalus viridis helleri*, the red diamond rattlesnake, *Crotalus ruber ruber*, and the sidewinder, *Crotalus cerastes laterorepens*, are implicated in the greatest number of injuries to human beings. Bites by nonvenomous reptiles are much more common than bites by rattlesnakes. The differentiation of venomous and nonvenomous snakebites has been reviewed by Pope and Perkins,[10] Klauber[2] and Oliver.[7]

The venom of the rattlesnake causes deleterious changes in the blood cells, defects in blood coagulation, injury to the intimal linings of vessels, damage to the heart muscle, alterations in the respiratory cycle and, to a lesser extent, changes in neuromuscular conduction.* The approximate lethal dose for man of the venom of the southern Pacific rattlesnake is estimated at 1.0 mg. of dried venom per kilogram of body weight. The average amount of venom milked from ten snakes of this species in this laboratory was 94 mg. when dried. Klauber[2] obtained an average of 112 mg. of dried venom from a total of 880 southern Pacific rattlesnakes, some of which were milked twice. The amount of venom a rattlesnake holds in reserve after an initial bite has been estimated to be between 25 and 75 per cent.[2]

Rattlesnake venom is a complex mixture, chiefly proteins, many of which have enzymatic activity. The lethal effects of the venom are probably due to the nonenzymatic proteins, although the enzymes and enzymatic combinations certainly contribute to the over-all toxicity of the venom. In addition to the separate and combined activities of these substances, and the metabolites formed by their inter-reactions, the envenomated victim may release several autopharmacologic substances which can render diagnosis and treatment of the victim more difficult.

Not all bites by rattlesnakes provoke symptoms or signs. In five of 22 cases observed by the author, there were no local or systemic manifestations. In three of these the snake's fangs had pierced the skin but had not entered the subcutaneous tissues. In these cases the venom had not been ejected or, if ejected, had not entered the wound. In two patients the fangs had entered the deeper tissues but no evidence of envenomation was apparent. Such incidents of rattlesnake bite without envenomation are well known.[8,9,18] The importance of this factor, and of others affecting the gravity of rattlesnake bites, have been reviewed by Klauber.[3]

SYMPTOMS AND SIGNS

The symptoms and signs following bites by rattlesnakes in Southern California are summarized in Table 1. Some essential differences were observed in the findings associated with the bites of different species. The bite of the western diamondback rattlesnake, *Crotalus atrox*, tended to cause more pain, edema, ecchymosis, hemorrhagic vesiculations, necrosis, hematemesis and hemolytic anemia than that

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*References 5, 11, 12, 13, 15, 17.

TABLE 1.—*Symptoms and Signs Following Rattlesnake Bites*

Symptoms and Signs	Author's Cases	Other Cases*
Fang marks	†22/22	†33/33
Swelling and edema	17/22	33/33
Pain	14/22	30/33
Ecchymosis	13/22	26/33
Swelling regional lymph nodes	11/12	7/8
Weakness	11/17	9/19
Sweating	10/17	5/12
Increase body temperature	9/17	10/23
Faintness or dizziness	8/17	7/14
Hemorrhagic vesiculations	8/17	6/16
Nausea or vomiting, or both	7/17	6/16
Numbness or tingling of tongue and mouth or scalp	7/14	3/10
Leukocytosis	6/11	6/14
Decrease in hemoglobin	7/17	5/16
Fasciculations	5/14	2/6
Blood pressure changes	7/17	12/27
Weak pulse	7/17	5/17
Increase pulse rate	7/17	12/25
Increase blood clotting time	7/17	2/6
Respiratory rate changes	6/17	6/20
Tingling or numbness of affected part	6/17	2/12
Respiratory difficulties	5/17	4/12
Necrosis	4/17	6/16
Hematemesis	4/17	2/18
Unconsciousness	4/17	5/11
Shock	4/17	5/11
Abnormal electrocardiogram	3/16	2/16
Convulsions	0/17	1/28
Paralysis	0/16	0/13

*Contributed by Doctors C. R. Anderson, A. B. Brower, J. Carlucci, I. A. Fields, E. Gettelman, C. L. Haines, Jr., J. R. Huntsman, E. F. Kline, A. E. Martin, C. J. McCammon, N. P. Papageorges and R. G. Zweifel.

†Number of times symptom or sign was observed in total number of cases.

of the southern Pacific rattlesnake. The latter's bite produced more pronounced changes in consciousness, more profuse weakness and sweating, more severe respiratory difficulties and more tingling or numbness over the affected part and over the tongue, mouth and scalp.

In the author's experience, bites by the sidewinders, *Crotalus cerastes*, have tended to be relatively mild. This may have been due in part to the small size of the snake, as the venom of this species is known to be very toxic.[6] Despite its small size the sidewinder is occasionally the cause of fatal ophidiasis in Southern California. The symptoms and signs following bites by the red diamond rattlesnake are similar to, but less severe than, those seen following bites by the western diamondback rattlesnake. This observation appears to be confirmed by the finding of Kline.[4]

Swelling and edema were the most consistent signs observed following envenomation by rattlesnakes in the 55 cases observed. Swelling usually occurred about the injured area within five minutes after the bite and progressed over the extremity during the ensuing one to thirty-six hours. In eight of the author's 22 cases, edema extended beyond the involved extremity.

Pain is a common complaint following rattlesnake bites. The intensity varies with the species of snake and the amount of venom. The most severe pain follows bites by the western diamondback rattlesnake and the red diamond rattlesnake. In three cases of poisoning by the southern Pacific rattlesnake and in one by the sidewinder, the pain was described as minor.

Decided weakness and sweating were consistently associated with poisoning by the southern Pacific rattlesnake. These symptoms were often associated with a rapid, thready, weak pulse and some decrease in systemic arterial pressure and body temperature.

Laboratory findings varied considerably. Mild leukocytosis, sphering of the red blood cells and defects in coagulation occurred in some cases. In four patients, progressive hemolytic anemia developed, the hemoglobin content eventually falling below 10.0 gm. per 100 cc. Elevated blood urea nitrogen and serum bilirubin were found in two of eight patients in whom tests for these substances were carried out. Hypofibrinogenemia was seen in three patients, hematuria in four, proteinuria in two, and glucosuria in six.

Deaths from rattlesnake bites in Southern California have been attributed to intraperitoneal or retroperitoneal hemorrhage associated with pronounced hemolytic anemia, to acute pulmonary edema associated with respiratory failure or to vascular collapse associated with acute hemolysis.

TREATMENT

The treatment and the rationale of the treatment for rattlesnake bites were discussed at length in a previous publication.[11] The suggestions offered in the present communication are based upon the author's clinical experiences, and upon animal experiments in this laboratory.[11,12,13,14]

Immobilization of the affected part with absolute rest for the patient are indicated in all cases. Application of a constriction band directly above the wound site, if the wound is on an extremity, is indicated. It should be released for 90 seconds every 15 minutes. Cruciate or longitudinal incisions one-eighth to one-quarter inch long through the fang marks are advisable if the snake was a large one or the patient is a child. The direction of the strike and the curvature of the fang should be borne in mind when determining the plane of the incision. The depth of fang penetration may be taken as approximately three-quarters of the distance between the two fang marks. Multiple incisions over the involved extremity or in advance of progressive edema are not advised.

Suction should be employed over the incisions during the first hour following the bite unless there is an abnormal amount of bleeding or obvious defect in coagulation. After the first hour the affected part should be placed in an ice bath and the tourniquet removed. Then an hour later ice bags may be substituted for the ice bath and used continuously for one to three days.

None of the foregoing first aid measures should in any way be regarded as substitutes for "the three A's," antivenin, antibiotic and antitoxin,[16] or tetanus toxoid should it be indicated; nor should they be instituted at the possible expense of delaying administration of the antivenin.

The importance of early antivenin therapy is well established.[2,15] The precautions and routes of administration for Antivenin (Crotalidae) Polyvalent® are outlined in the brochure enclosed with each package of the substance. The amount of antivenin used in an individual case depends on the species and size of the snake, the size of the patient, the number of bites, and other factors. For bites by the southern Pacific rattlesnake the author has used three to seven 10 cc. vials in each case. Children bitten by larger rattlesnakes will need at least four vials, possibly eight or nine; and in such cases early administration of the antivenin cannot be overemphasized. Bites by sidewinders require one to four vials. The route for administering the antivenin varies with the individual case. If the patient is not sensitive to the antivenin, the first vial can be divided into three portions and one portion given subcutaneously at various points around the involved extremity above the bite, or in advance of the swelling. Antivenin should never be injected into a toe or finger, however. The second portion is given intramuscularly into a large muscle mass of the involved extremity and the last portion is administered intravenously in a physiological solution. Subsequent doses should be given intramuscularly or intravenously. The anterior thigh is a good area for repeated intramuscular injections.

If the patient is sensitive to horse serum, desensitization should be carried out as indicated in the brochure accompanying the antivenin. Adrenocorticotrophic hormone and cortisone are of value in controlling untoward reactions to horse serum. More than one-fourth of the patients in the author's series of cases had hypersensitivity reactions to the horse serum or to an antibiotic or venom.

Because hemolytic anemia was often observed to follow rattlesnake bite, the author routinely determines the blood type of each patient on admission to hospital. Whole blood transfusions were given in five of the 22 cases. Bleeding and coagulation times should be determined, and hemoglobin determinations, red blood cell counts and urinalysis should be done repeatedly during the entire treatment and the immediate follow-up period.

Use of the appropriate antitetanus agent and antibiotic is advisable. Corticosteroids have been used in many areas of the United States in the treatment of ophidiasis particularly for bites by copperheads. The author has used them in several cases but has not been able to determine whether they were of value in either reducing the severity of the symptoms or shortening the stay in hospital. It is felt that the physician's reliance should be placed in the antivenin, and that until knowledge of the mechanism of action by which the corticosteroids enter into this complex reaction is more complete, their use should be limited to combating the allergic manifestations provoked by the venom or the horse serum.

Oxygen should be available for patients bitten by a rattlesnake, ready for use if symptoms of systemic involvement develop. Attention should be given to the maintenance of cardiovascular tone. The seriousness of the bite cannot always be determined by the extent of the local manifestations. Serious cardiovascular and respiratory deficits have been observed by the author 20 to 40 hours after the bite, at which time the edema and local tissue changes were minimal.

If a finger, hand or foot has been injured, physical therapy should be begun as soon as the patient's condition permits. Residual contractures are not uncommon. In Southern California the average hospital stay for rattlesnake bites is seven days.

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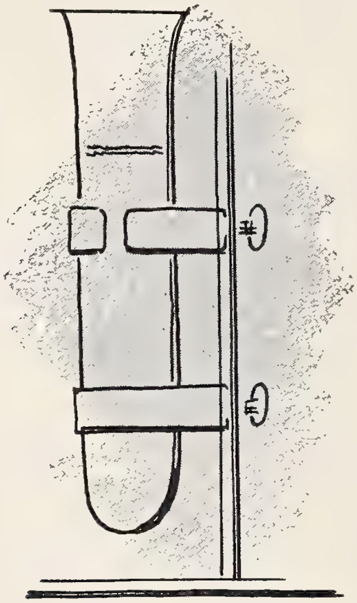

Impressions of Soviet Psychiatry

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• Psychiatry in the Soviet Union is essentially conservative, middle-of-the-road and eclectic. It rejects both extremes: radical surgical treatment such as prefrontal lobotomy, and Freudian psychoanalysis. It is Pavlovian and neurophysiological in its orientation and closely linked to Marxian philosophy; most personal problems are believed to be sociocultural in origin, and they are expected to diminish as the country moves closer toward its political and economic goals, making psychiatry progressively more circumscribed in its applications.

The varieties of therapy include work therapy, aimed toward returning patients to society quickly and productively; electrosleep therapy and electroconvulsive therapy, both of which seem to be falling into disrepute; insulin-coma therapy, widely used in psychosis; hunger therapy; pharmacotherapy similar to our own but lacking in the large numbers of drugs we use; tissue therapy; psychotherapy, of limited depth and chiefly concerned with the rational, conscious elements in the patient's life.

MY OVER-ALL IMPRESSION of psychiatry in the Soviet Union, based on a month-long visit there in the summer of 1959, is that it is an eclectic discipline, making use of a wide range of techniques. It is essentially conservative and middle-of-the-road. It has, on one hand, abandoned such radical surgical procedures as prefrontal lobotomies, and, at the other end of the spectrum, it also rejects psychoanalysis as we practice it in this country.

It occupies a relatively modest place in the total practice of medicine in the Soviet Union. One measure of this is the fact that there is less than one hospital bed for mentally ill patients per 1,000 population there, compared with the ratio here in California of 2.3 public beds per thousand, plus a considerable number of beds in private hospitals. This does not necessarily mean that there is less mental illness there than here, and it certainly does not mean that the Russians are less concerned than we are about meeting the health needs of the people. Indeed, they are very advanced and very aggressive in this respect. It does mean that they tend to treat emotionally disturbed persons on an outpatient basis as much as possible. It means, too, that the practice of psychiatry has neither the depth nor the scope there that it has in this country.

Like every other scientific discipline in the Soviet Union, psychiatry takes its cue from the prevailing political philosophy. The validity of all scientific findings is gauged by whether or not they are compatible with Marxism. It is within this context that the Freudian orientation is unconditionally rejected; it is considered inimical to Marxism. It is also within this context of political acceptability that the Pavlovian neurophysiological approach is the all-embracing one in Soviet psychiatry. Its materialist and mechanistic orientation is consistent with Marxian goals.

The types of problems presented to the psychiatrist in this country are considered by the Russians to be typically decadent and bourgeois. The concern for personal fulfillment, the emphasis on meeting the emotional needs of the individual, the probing into the unconscious to identify and clarify emotional conflicts—such considerations are alien to Soviet psychiatrists.

Essentially, their belief is that the problems of the individual are primarily socio-economic and environmental in nature. Many such problems are dealt with by agencies such as trade unions and Young Pioneers, which concern themselves with many of the kinds of problems that social workers handle in this country. Social workers as a professional entity are nonexistent in the Soviet Union.

It is believed there that as the country continues to make progress in achieving its Marxist goals, the problems of the mentally ill patient will no longer present themselves and that the practice of psychiatry will in due course wither away. Meanwhile, emphasis in psychotherapy is on integrating the individual within the social fabric, rather than on achieving self-understanding.

The cornerstone of Soviet psychiatry is the Pavlovian approach, which is concerned with the functioning of the cortex as the control center and the consciously thinking element of the brain. Function is interpreted in terms of stimulation-inhibition systems. Malfunction is explained primarily by imbalance or conflict between the dynamics of stimulation and inhibition. Treatment consists of restoring this balance in neurophysiological terms.

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Behavior is described in terms of unconditioned reflexes, which are innate; conditioned reflexes, which are learned patterns acquired through the developmental phases; and, in effect, a second layer of conditioned reflexes which are derived from and are dependent upon those originally learned. This concept binds all activity into a complex, interconnected neurophysiological pattern.

Given this orientation, the Soviet psychiatrist tends to deal with his patient in terms of the conscious, rational elements of his life situation. He persuades rather than probes, and tries to provide guidance rather than produce insight.

How does this philosophical and scientific orientation manifest itself in specific therapy? Some types of therapy I observed were eminently rational and directly reflected the Pavlovian approach. Others were almost metaphysical, somewhat bizarre, and, I must admit, highly provocative of thought in a student of psychiatry. Like most eclectic disciplines, Soviet psychiatry tends to be pragmatic and expedient. Like the practice of psychiatry elsewhere, it manifests inconsistencies and conflicts.

At the Bechterev Institute in Leningrad, I observed an impressive demonstration of work therapy. Here in a group of factory-like shops, both inpatients and outpatients spend a portion of each day at productive work.

The work that was being performed included the manufacture of fountain pens, buttons, hammocks, gymnasium equipment, fabric and furniture. The shops are well equipped and the work is supervised by technical experts who set and maintain high standards of proficiency. Products made in these workshops are sold to the general public through stores, and proceeds are spent to purchase new equipment for Bechterev and to pay for repairs.

The patient in work therapy is encouraged to continue with work of the type he was doing before he became ill, and the aim of the program is to return him as soon as possible to his productive function within the social organization. This aim directly reflects the Marxist orientation of the program.

There is recognition of the need for vocational retraining of some patients, particularly those with brain damage. This also is provided by the program.

Each patient is encouraged to work at his full capacity. The length of work day and complexity of the tasks are increased as the patients give evidence of improvement. The climate within the workshops is kept as free as possible from tension and stress, but the approach to the work is earnest and realistic—in decided contrast to the indulgent, "make-work" atmosphere which tends to characterize many occupational therapy programs in this country.

The technical supervisors in the workshops function under the direction of the psychiatric staff, which holds regular psychotherapeutic sessions with the patients, either on a group basis or individually. These sessions are devoted primarily to explanation, suggestions, guidance and advice with respect to work performance and work relationships. Psychiatrists also make daily rounds to observe the patients in the workshops.

In evaluating such a program, one must keep in mind that it is directly linked to the basic Marxian concept of work and its social usefulness. In a communistic society work is the central core of life. The dedicated attitude the individual worker has toward maintaining his status in the social organization through work infuses the work therapy program with a vitality which would be difficult to match in this country.

Yet, even in our individualistic society, people derive their satisfactions and their sense of identity, to a large extent, in terms of the constructive work they do. Work tends to deepen one's feelings of adequacy and helps overcome feelings of helplessness. Although I doubt that work as therapy in this country could ever be as all-enveloping as it is in the Soviet Union, there is a good deal to be learned from the Soviet program. I share their belief that a patient should suffer as little disarticulation from his work life as possible during treatment. The Russian goal of speeding the patient back to his normal pattern of work is one we might emulate.

In pronounced contrast to the reality-oriented program of work therapy was the almost mystical treatment I observed at Sochi. Sochi is one of a group of semitropical cities on the Black Sea coast that has been converted into "factories of health" for everyone.

Almost all "vacationers" as well as convalescents receive regular treatment at the palatial Sochi spa, an impressive marble structure that looks more like a Greco-Roman temple than a medical facility. Sochi is celebrated for the curative power of its sulphur springs. The sulphur-laden water is piped into the building to be used for an almost endless repertory of sulphur treatments, which are available for neurotic patients as well as those with somatic illnesses. The Soviet physicians who accompanied me persuaded me to sample several of the treatments, and insisted that sulphur had specific therapeutic value for neurosis. My impression was that the highly organized, hypnotically suggestive rites associated with the treatment was the main curative ingredient. I felt sure that tens of thousands of occult neurotics were kept in adequate compensation yearly in these sanitarium cities. Such patients, incidentally, do not show up in the official statistics on mental illness, which suggests that for comparative purposes those statistics are of doubtful value.

Sleep therapy has been widely used in the Soviet Union, although I was given to understand that it is now falling into some disrepute. This treatment, which is quite different from electronarcosis as practiced in this country, induces sleep for a period ranging from ten to sixty days. Sleep is achieved through a sustained electric current which produces a protective cortical inhibition. The treatment is used for manic-depressive and schizophrenic patients and for those in acute anxiety states. The patient can be awakened for the intake of food and for meeting other physical needs, and returned to the sleep state simply by the removal and reapplication of the current. This treatment apparently provides temporary relief from acutely disturbing thoughts, sensations and feelings, probably thereby allowing a reconstitution of ego defenses, although such an explanation as this would not be acceptable to the Pavlovians.

Both insulin and electroconvulsive therapy are used in the Soviet Union, although the Russian psychiatrists' evaluation of these two treatments is different from ours. They use insulin-coma treatment extensively in the treatment of schizophrenic patients, with few reservations. In this country, on the other hand, insulin treatment is becoming less widely used because of the adverse side effects, the possible dangers and the time and expense involved.

Electroconvulsive therapy is currently in growing disfavor among Soviet psychiatrists. They believe that this treatment causes brain damage. Professor Fedotov, chief of the Institute of Psychiatry in Moscow, documented this thesis by demonstrating to me the brain damage produced in small animals by the use of electric currents. However, I believe that the experience we have had in this country with electroconvulsive therapy warrants its continued inclusion in our armamentarium, since brain damage in human material is considered by us as the unusual rather than the common occurrence. True, electroconvulsive therapy is sometimes used unwisely, and this indiscriminate use has reflected adversely on its reputation. But used in properly selected cases, and properly administered with the support of excellent muscle-relaxants which are now available, it is a sound and effective form of therapy.

Drugs are very widely used in Soviet psychiatric practice. They fit very properly within the Pavlovian orientation, since their action is organic. The Russian drugs are essentially the same as ours. The ones most widely used are aminazine (which is like chlorpromazine), reserpine and amphetamine. I saw nothing there comparable to meprobamate. Without the thrust of a highly competitive pharmaceutical industry, the Soviet Union does not have our great proliferation of each type of drug. This has both advantages and disadvantages. There it is possible to accumulate enough clinical data on each drug, through exhaustive and unvaried use, to yield significant conclusions. Here, we are under such promotional pressure to try out a new variation that we often virtually abandon good drugs before we have really tested their value to the limits. It sometimes seems that the staying power of a drug in this country is positively correlated with the size of its promotional budget rather than with its demonstrated effectiveness. On the other hand, out of the endless variations that are presented to us, we often encounter modifications that, although structurally minor, produce clinical significantly different results. This experience with a great range of derivatives is not available to our colleagues in the Soviet Union.

Drastic psychosurgery such as prefrontal lobotomy has been officially abolished in the Soviet Union since 1950. It has been denounced as a destructive procedure and contrary to the Pavlovian theory of protective inhibition. The position there is that in schizophrenia the cells are in a prolonged state of inhibition and do not function, but that there is always the possibility of recovery. Once the surgeon's knife has removed the cells, even that remote possibility is gone. Personally, I cannot quarrel with that point of view.

Hypnosis is in good repute in the Soviet Union. Since it functions through the mechanism of cortical inhibition, it is compatible with the Pavlovian approach. Although I encountered relatively little direct evidence of its use, I understand that some very rewarding research is being carried on there in the use of hypnotism in obstetrics, dentistry and anesthesia, and as an adjunct to psychotherapy.

One of the strangest techniques I encountered was the use of hunger therapy. This method, I was informed, was especially applicable to schizophrenics and severe depressive reactions, but contraindicated where much agitation was present. The patient is given no food at all for 30 days. The intake of water is also restricted. Vitamins and bicarbonates are provided to prevent severe nutritional deficiency syndromes and acidosis. During this period, the patient is very carefully watched medically. Blood chemical studies and urinalysis are done regularly. Every precaution is taken to make sure that the patient is undergoing no threatening physiological changes. After the 30-day period, the intake of food is gradually increased. This goes on for another 30-day period, at the end of which the patient has been restored to his normal intake.

I will have to admit that, except for its obvious effectiveness in dealing temporarily with obesity, I fail to discern what therapeutic purpose is served. In most cases, depriving a person of food strikes a blow at his survival strivings. This treatment must certainly be construed unconsciously by patients as highly punitive, and if they improve as the result of it, it is probably because they have become restituted with the punitive demands of their own consciences.

Few therapeutic innovations in the Soviet Union challenged my imagination as vividly as did tissue therapy. I am in no position to validate for you the effectiveness of this concept, but I would like to report what I learned through my discussions with Dr. Filatova, widow of academician Vladimir Filatov, founder of the theory. Filatov was an ophthalmologist, and his theory of tissue therapy was evolved as the result of his work with corneal transplantation. To sum it up briefly, he discovered that such transplants were more effective when he took the cornea from the eye of a corpse and kept it in cold storage for several days, than when he worked with a fresh corneal graft taken from a living donor. Stimulated by this phenomenon, he undertook extensive investigations which led him to the hypothesis that all living material, both animal and vegetable, if maintained under conditions which are unfavorable but not lethal, responds by generating certain substances which he called biogenic stimulators, and that these substances are capable of stimulating the vital processes in an organism into which they have been introduced.

He attributed to biogenic stimulators a number of properties, such as deterring inflammatory and degenerative processes and intensifying the secretion of gastric juice and the formation of antibodies. On the basis of extended though inconclusive studies of the chemical nature of these stimulators, he suggested that their fundamental action was probably to increase the activity of enzymes of the body and consequently to improve metabolism.

Accordingly, Filatov concluded that tissue itself, under the proper circumstances, had enormous therapeutic capacities—that it could generate great adaptive powers within any organism. He used tissue in several forms—either segments of preserved tissue implanted surgically or tissue extract given by injection or orally.

At the Filatov Institute in Odessa, Dr. Filatova showed me a map which indicated widespread current research in tissue therapy. Between 1933, when Filatov started to work with tissue therapy, and his death in 1956, he had a series of fantastically successful experiences with it within his own specialty. Colleagues of his, according to his reports, were equally successful in treating skin lesions of various kinds, bronchial asthma, ulcers, tuberculosis, leprosy and venereal diseases. In addition—and this, of course, was of special interest to me—he reported favorable experience in treating two patients with advanced schizophrenia through tissue therapy, and cited similar results as having been reported by several Russian psychiatrists, including Lastovetsky, Shpak, Kopeliovich and Maslov.

I have touched on a number of somatic therapies used in the Soviet Union, but I do not wish to give the impression that these methods overshadow psychotherapy, which is becoming increasingly widely used there. Nor do I wish to suggest that psychotherapy in that culture is limited solely to a back-to-work movement. Despite the basic Pavlovian orientation, many diverse elements find their way into Soviet psychotherapy. There are now specialists who devote their entire professional time to a type of psychotherapy which is dynamically oriented. Professor V. N. Myasishchev, director of the Bechterev Institute, carries on such a practice, I am told.

These psychiatrists, although they do not seek a sexual basis for all behavior problems, do probe deeply into the patient's past for the psychogenesis of personality disorders. They search out obscure and concealed sources in experiences of childhood which might illuminate current symptoms. Their concern with the social integration of the patient has not completely obliterated their recognition of highly individual and personal emotional problems in the field of marital and familial relationships, and their psychotherapeutic methods of dealing with such problems are not unlike ours.

To sum up my impressions of Soviet psychiatry, I feel that its rigid adherence to Pavlov's orientation is a limiting factor, and that its subservience to the prevailing political philosophy is a grave hazard. On the other hand, the general willingness to try new techniques, such as those I have described today, indicates a vitality within the discipline. There is certainly much that is commendable about the reality-oriented approach of such treatments as work therapy.

From my point of view, the arbitrary rejection of Freud on the part of Soviet psychiatry creates a serious communications barrier between us and them. And yet, since most psychiatrists in this country are also fundamentally eclectic in their approach, the barrier is far from insurmountable.

On the basis of the month that I spent behind the Iron Curtain, I feel that psychiatrists on both sides of the curtain have a great deal to contribute to each other through an interested and alert exchange of ideas, approaches, experiences and findings. It is such interchange, no matter how baffling the barriers, that psychiatry—and indeed all of medicine—must seek, for our own strength and for the sake of the people we serve.

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Sensory Deprivation on an Eye Service

Its Significance and Management

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• In a detailed investigation of 174 patients who wore patches over both eyes after ocular operations, some 35 per cent were observed to have one or more symptoms of mental aberrations. In a smaller group who had repair of retinal detachment and therefore had to wear eye patches for a much longer time, the incidence of mental symptoms was 100 per cent. A common symptom called "noncompliance" was found which has hitherto been regarded simply as lack of cooperation by the patient.

The incidence of postoperative complications was considerably higher in patients who had symptoms of mental disturbance than in those who did not.

In these circumstances it would appear worth while to prepare the patient mentally for operation, to give him assurances beforehand, and to take measures to reduce his "isolation" while he has to wear patches.

PSYCHIATRISTS long have known that in some patients the visual deprivation caused by wearing patches over both eyes after ocular operations, together with the relative isolation due to restriction of movements and lack of familiar persons about them for a considerable time, gives rise to mental aberrations.

In the present study, psychiatrists and ophthalmologists working together have attempted to investigate more thoroughly the many types of mental symptoms arising in patients during a period of bilateral patching associated with treatment of the eyes, and to assess the possible significance of these symptoms as directly related to the condition of the eye on which operation was done.

In a previous report on a phase of this study,[3] the symptoms observed in these patients were described, including one called "noncompliance." Examples of the latter included sitting up in bed and removing eye patches after being specifically instructed not to. Previously, such actions had been regarded as simply lack of cooperation. However, considering the patients' motivation, the occurrence of the symptom during periods of reduced awareness (during, immediately before and immediately after sleep), and its frequent association with other mental symptoms like hallucinations, noncompliance came to be viewed as ascribable to mental aberration. Repeated interviews and continuous observation elicited that patients with patches over both eyes frequently had a clouded sensorium and periods of light sleep during the daytime. Such a state of reduced awareness, with loss of some of the normal inhibitions, apparently made noncompliance possible. Patients in the study were observed before, during and after the period of bilateral patching, which provided controls in evaluating mental symptoms.

RESULTS

The frequency and severity of mental symptoms were noted to increase with the length of the period of bilateral patching. See Table 1. All of 15 patients operated on for repair of retinal detachment, had one or more mental symptoms, six having had hallucinations. Of 159 patients who had intra-ocular operations (such as for cataract removal), which entailed bilateral patching for no longer than 24 hours in most cases, only six had hallucinations and 47 had one or more mental symptoms. These two groups also served to illustrate the small role played by age alone, since the average age of the patients with retinal detachment was 40 while that of the group undergoing intra-ocular operation was 62 years.

TABLE 1.—*Incidence of Mental Symptoms in Patients with Patches Over Both Eyes*

Operation for:	Total No. of Cases*	Average Age (Years)	Patients with Mental Symptoms No.	Patients with Mental Symptoms Per Cent
Retinal detachment	15	40	15	100
Intra-ocular disease	159	62	47	30
	174			

*Not all patients had operation.

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TABLE 2.—*Incidence of Surgical Complications Following Intra-ocular Operations*

	Total No. of Cases	Complications No.	Complications Per Cent
Mental symptoms present	35	18	51
Mental symptoms absent	109	27	25
	144	45	

In an attempt to determine the effect of these aberrations on the results of operation, the incidence of surgical complications in patients who had mental symptoms was compared with the incidence in those who had not (Table 2). Table 3 lists the incidence of specific complications occurring after operations for cataract extraction, and further shows whether the complication occurred during the time the patches were in place or after they were removed. This separation as to the time of occurrence highlights the fact that complications are greatest during the period of binocular patching (one day). The difference is particularly striking in that all the other complications were scattered over a nine- to thirteen-day period, when the eye not surgically treated is uncovered. In general the incidence of complications was significantly higher in the aberrant group than in the undisturbed. Hemorrhage into the anterior chamber in patients with patches over both eyes is four times as frequent in those with mental disturbance as in those without.

TABLE 3.—*Incidence of Specific Surgical Complications in Mentally Disturbed and in Normal Patients Following Cataract Extraction*

	With Mental Symptoms (36 Patients)		Without Mental Symptoms (97 Patients)	
	No.	Per Cent	No.	Per Cent
While wearing patches bilaterally (one day):				
Hyphema	6	17	4	4
Iris prolapse	0	....	1	1
Flat chamber	1	3	1	1
After removal of patches (9 to 13 days):				
Hyphema	5	14	8	8
Iris prolapse	0	....	2	2
Flat chamber	3	8	7	7

MANAGEMENT

The significance of mental symptoms in association with operations on the eyes is undoubtedly greater than ophthalmologists in general have recognized. We believe there is much to be gained by even a brief appraisal of the mental status of a patient who is to have an eye operation, for it may bring to light significant mental defects or traits such as alcoholism or senile changes. Any physical factors that might make absolute bed rest or prolonged stay in a supine position difficult or even painful for the patient should be corrected or minimized before operation. Detailed and repeated explanations of the operative and postoperative routine are usually indicated. This and the surgeon's reassurances of a successful outcome will help to allay the patient's fears and anxiety. The presence of a language barrier or a hearing defect makes explanation and reassurance even more important.

The value of having someone, either a nurse or a member of the family, constantly at the bedside during the difficult period the patient must wear patches has long been recognized.[1,2] At present we are attempting to evaluate this factor statistically in a controlled study, using constant family attendance in one ward and not in another. Where this is not possible, the use of bedside radios and frequent conversations between the patient and ward personnel help to minimize the feeling of isolation.

Of immediate importance to ophthalmic surgeons is the need to reappraise at intervals the routine handling of surgical patients in relation to changing surgical techniques. Adoption of newer retinal detachment procedures by some surgeons, for example, has all but eliminated prolonged bilateral patching for their patients.

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The Significance of Infection in Allergic Disease

Its Influence on Diagnosis and Management

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• The presence of infection in allergic disease produces a confused picture in which two different causative factors must be clearly separated by the physician if he is to treat the patient successfully. The effects of infection are not consistent. There are situations, as seen in infectious diseases, where symptoms of allergic disease are temporarily relieved and others where the infection may intensify or precipitate the allergic condition. It is likewise important to recognize the complications superimposed upon allergic disease by infection. In such cases, control of the infection is as dependent upon control of the allergy as it is upon antibiotics.

THE DEVELOPMENT of concurrent infection in allergic disease produces a double effect because not only is the pattern and course of the allergic disease altered but, reciprocally, the infection is also thereby modified. This ambivalent circumstance can produce diagnostic and therapeutic confusion and can also lead to the convenient premise that infection is the cause of the entire clinical manifestation unless the interrelationships are understood. Available evidence and clinical experience does not support this belief.

Misunderstanding develops from a failure to specifically limit definition of the term *allergy* to clinical considerations wherein such organs as the respiratory tract or the skin manifest allergic disease and almost invariably respond to specific treatment. Broad use of the term *allergy* to include the immune reaction to tuberculin or to such vaguely understood areas as collagenous disease, has no place here. We shall confine our remarks, therefore, to the clinical conceptions of allergic disease as commonly encountered in everyday practice and which are involved with but not caused by infection. Although the two may seem inseparably related, they must be recognized as separate and treated individually.

Today's concept of infection recognizes its systemic effect in addition to the local focus of inflammatory response. Fever, lymph nodal enlargement, cellular changes in organs with alteration of function and concurrent changes in pituitary and adrenal gland responses attest the constitutional impact of both viral and bacterial disease. This general responsiveness and change necessarily has an effect upon an allergic person, for his disease is also a constitutional one even though the apparent manifestations are focussed in one area or shock organ. With infection the local response tends to be the focal point of the cause whereas in allergic disease the local response is secondary to a systemic cause. It is not unusual, therefore, to find that symptoms of allergy are altered by infection just as infection can be exaggerated or intensified when it develops upon the stroma of allergic disease. It is the variable role that infection plays which must be recognized and understood in order to place it in its proper perspective.

The episode or attack of allergic disease which accompanies or is precipitated by infection is most commonly encountered in practice. Since the life history of an allergic person is punctuated by exacerbations and remissions of symptoms, it is not unusual to find the onset of some episode initiated by the development of an acute infection. An attack of asthma may be associated with such a sequence, yet a detailed history will uncover previous asthma or other allergic symptoms indicating that this attack was not de novo. The onset of prolonged exacerbations of allergic rhinitis, particularly during the winter months, sometimes will start with an infection manifested by fever and purulent nasal drainage for a few days. The nocturnal cough which persists long after such an onset similarly connotes a postnasal drip from an allergic nasal mucosa.

The idea of an infectious onset is commonly misapplied to bronchial asthma. Nasal symptoms—obstruction, sneezing and rhinorrhea—will often characterize the early phases of this condition. In describing this sequence of events the patient may misdirect attention to a non-existent upper respiratory tract infection rather than to the asthma itself. It is advisable to insist upon an explicit definition of the word "cold" which is so loosely applied

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to respiratory symptoms of all varieties. Similar diagnostic confusion develops because chronic respiratory symptoms are too readily diagnosed as bronchiectasis. Allergists encounter few such cases in which that diagnosis can be thoroughly substantiated. Patients with that diagnosis may have bronchial asthma and thrive therapeutically when so treated. At the Long Beach Veterans Hospital a survey of patients who had been labeled in other centers as having bronchiectasis produced relatively few valid cases when subjected to critical review. Radiologists in a large local hospital who were questioned on this subject said that bronchiectasis as a radiological diagnosis is very unusual in their experience.

These observations suggest that greater caution is needed in assessing chronic respiratory disease. In particular it should be recognized that such chronic symptoms as are accompanied by considerable expectoration of sputum should be suspect for bronchial asthma before consigning them to the more dismal prospects often associated with bronchiectasis. Finally, it is important to recognize the mild, superficial bronchitis which occasionally complicates asthma and is accompanied by purulent sputum, minimal systemic symptoms and a prompt response to expectorants and to antibiotic therapy.

Some infections suppress rather than potentiate allergic disease. This is particularly true of the viral diseases, for symptoms of allergic reaction diminish or even vanish entirely under their influence.[3] Such observations are common during the infectious diseases of childhood. Although the exanthem of chicken pox, for example, may be quite intense in an eczematous patient, is is reassuring to the parent to know that the allergic rash tends to subside. There seems to be no direct connection between this suppressive effect and the clinical intensity of the viral disease. Part of this pattern is the brief exacerbation of allergic disease during the invasion period of infectious disease. This will usually evaporate as full blown symptoms develop. It is possible that the relationship is a type of immunological inhibition or is perhaps related to the stress phenomenon which accompanies invasion of a virus. This symptom pattern was noted by us during a recent epidemic of influenza as well as during brief episodes of viral enteritis. One of us[2] reported the suppression of eczema during the course of Kaposi's varicelliform eruption, a disease most often caused by the virus of herpes simplex. Recognition of this relationship, therefore, is essential if the physician is to anticipate events and reassure the patient or parent.

Conversely, upon examination of the effect of allergic disease upon infection, it is observed not only that the infection can be intensified but that in almost all such situations it is the respiratory tract that is affected. When this occurs, adequate drainage of secretions is essential if infection is to resolve promptly. The patient with allergic disease of the respiratory tract must dispose of excessive secretion of mucus from the sinuses, the nasal mucosa or the bronchi. Interference with this evacuation, whether by edema or inspissated mucus, leads to stasis and encourages the development of secondary infection, and treatment of both the allergic obstruction and the infection becomes necessary.

A number of typical examples may be cited. Sinus infection must generally be regarded as developing in this fashion, and it has been reported that the infection in this instance is usually superimposed upon mucosa altered by allergic response.[9] The same investigator found the sinus infection quite superficial, suggesting that adequate drainage could be the primary ingredient of a cure.

In such circumstances the effect of surgical treatment is, at best, to provide temporary relief while by-passing the underlying allergic cause. The only indication for surgical interference in the nose in the vast majority of cases of sinus infection or even of simple airway obstruction is the presence of obstructive nasal polyps. Middle ear infection in many instances is secondary to allergic edema of the fossa of Rosenmuller that closes the eustachian orifice. The presence of lymphoid or adenoid tissue in this area in children explains their increased susceptibility, since such tissue swells easily. If the obstruction is not relieved soon after the initial symptom of ear pain, secondary infection develops rapidly. In bronchial asthma a very serious sequence of events attends the obstruction of a bronchus by a plug of inspissated mucus. That area of lung beyond the plug becomes atelectatic and pneumonitis develops rapidly. One can observe the tremendous importance of obstruction in such cases when dramatic evaporation of clinical evidence of infection is produced by expulsion of the mucus plug. Here again it is apparent that treatment of the infection alone is insufficient. One of the dangers inherent in all these examples of infection incident to allergic obstruction is the tendency for the acute infection to so obscure the allergic component that the physician's attention is drawn exclusively to the infection.

When the skin is involved in allergic disease, secondary infection is relatively uncommon even in the presence of impetiginous lesions of the unaffected skin.[1] One can infer that the eczematous skin must be particularly resistant, since it is subjected to constant trauma and excoriation of scratching with dirty hands. Occasionally, a simple pustular eruption becomes superimposed and responds rapidly to antibiotic therapy. Chronic, low grade infection is also seen now and then with local enlargement of lymph nodes as its cardinal characteristic. While the suppressive effect of viral disease has already been mentioned in this regard, viral involvement of the eczematous skin is sometimes seen and can be very serious. The virus of both herpes simplex and vaccinia invade areas involved in eczema, producing Kaposi's varicelliform eruption. No specific therapy is available for this disease, which can be attended by pronounced toxicity and, occasionally, by death. It is therefore a very important prophylactic measure not only to withhold vaccination from patients with eczema but also for such patients to avoid exposure to herpes simplex.

Occasionally an allergist is consulted regarding unknown fevers, and in some such cases a rather typical but obscure syndrome may be found. The patient with this syndrome is invariably a child with perennial nasal symptoms and long periods of elevated temperature lasting for weeks or even months. Exhaustive investigation for the cause of the fever produces no etiologic clues and extensive use of antibiotics proves fruitless, and the nasal symptoms are patently of allergic origin. We are currently treating two such children by specific hyposensitization injections who are now able to attend school regularly whereas they had previously required home tutors because of prolonged absences due to persistent fever. The diagnostic obscurity of these cases and the failure of all other therapeutic efforts is ample justification for management directed at relief of allergic response when evidence of allergic disease exists.

Consonant with the foregoing remarks it should be apparent that concomitant allergic disease and infection require a therapeutic program which considers both factors. It is unfortunate that the concept that infection is a cause of allergic disease still exists, for it thwarts effective therapy. Siegal studied 109 asthmatic patients with sinus disease and came to the conclusion that the infection was not causally related but merely superimposed upon the associated upper respiratory tract allergic disease.[9] Hosen and Carabelle observed a large group of patients and concluded that in no case at any age could infection be labeled as a cause of allergic disease, although they regarded it as being of considerable importance as a secondary or trigger mechanism.[7] Because allergy is etiologically independent of infection, the use of bacterial vaccines is illogical and ineffective. Well controlled studies on large numbers of patients with asthma showed unequivocally that no better results are obtained with vaccine therapy than with injections of saline solution used as controls.[4] Helander, who used a double-blind format for his investigations, pointed out the danger of local and systemic reactions to injections of bacterial vaccines which he considered as more dangerous and certainly far less effective than specific hyposensitization.[6] Any apparent connection between vaccine injections and successful results must be classified as either a placebo effect or as a nonspecific protein reaction which for many years has been known to be of some slight value in the treatment of allergic disease.

The importance of drainage in infections of the allergically involved respiratory tract cannot be overemphasized. Involvement of the nasal passages and sinuses calls for the use of decongestants, which should be mild and buffered to avoid further irritation. Too frequent use of powerful or irritating solutions in the nose will cause a subsequent and more severe edema. Antihistamines will augment decongestion but seem to lose their effectiveness in the presence of inflammation. The relative potency of these drugs varies with the individual patient and they must be tried on this basis. Liberal quantities of decongestant should be used early in acute otitis media in an effort to open the eustachian tube orifice. At least 1 cc. should be instilled, with the head tilted to be certain that the solution reaches the part. When effective, this should be repeated at three-hour intervals to maintain patency. Drainage of the bronchial tree involves a different therapeutic approach. Particularly, antihistamines should be avoided, as they have drying action which encourages mucus plugging.[10] Efforts should rather be directed toward thinning and softening the mucus secretions and encouraging their evacuation by cough. Nothing has been found more effective for this purpose than the liberal ingestion of fluids. This must be dramatically impressed upon the patient, with intravenous administration offered as the only alternative. To implement the effect of fluids, potassium iodide in saturated solution stands alone as an efficient expectorant regardless of proprietary claims. The use of agents that suppress cough is obviously antagonistic to these principles and must be avoided.

Antibiotics are unquestionably effective as a part of the therapeutic regimen but their use in uncomplicated allergic disease and as prophylaxis has proved to be of little value. More complications and longer illnesses develop when antimicrobial agents are used to prevent infection, according to Reimann.[8] It is therefore mandatory to assess respiratory symptoms carefully and to seek supportive evidence of infection such as fever and increased leukocyte content in the blood. Combinations of antibiotics should be avoided since their effect is rarely additive and there is strong evidence that some may be less effective than when given alone.[8] In particular, the popular combination of penicillin and dihydrostreptomycin produces serious toxicity too often to permit casual administration of it. Where it is possible to obtain purulent material, titration of the organisms for selective antibiotic sensitivity, although not infallible, is recommended for a more specific selection of a drug. Although systemic administration of antibiotics is invariably most effective, combining them with nasal decongestants used topically in mild nasal infections is useful. The popularity of gamma globulin as prophylaxis against infection is not supported by the facts. Several recent reports indicate that its use is of questionable value.[5] Steroids should rarely, if ever, be used in the presence of infection. When infection develops in a patient receiving a maintenance dose of steroids, the dose should be increased to meet the greater demands for the steroids that the suppressed adrenal cortex cannot meet.

Discussion thus far has been confined to treatment of the acute episode of concomitant infection and allergic disease. It is only natural to expect the allergic symptoms to continue with their characteristic chronicity and for future incidents of infection to arise. This pattern can be anticipated and prevented by management of the allergic factor. A careful and detailed history supplemented by a physical examination must be obtained. Corroboration by skin testing should then follow and a long-range therapeutic regime established. This should include elimination of factors in the environment and in the diet, when warranted, and a course of hyposensitization with a specific antigen administered as indicated by the investigation. In this fashion one can practice truly prophylactic therapy, as proven by a decided reduction or elimination of episodes of infection consequent to improvement of the symptoms of allergic reaction.

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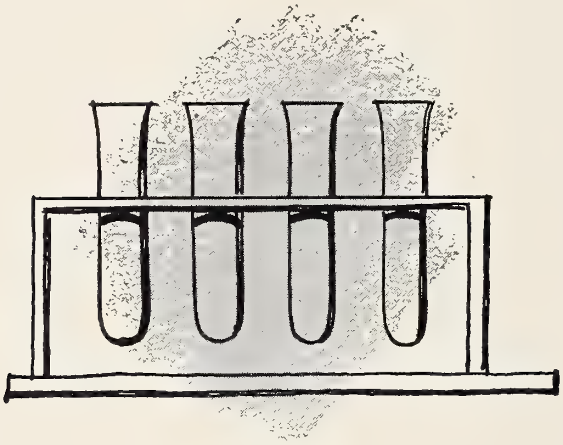

Physicians as Psychotherapists

HORACE GRAY, *M.D.*, Santa Barbara

EFFORTS TO AROUSE local participation in community mental health services have met with some difficulties, which have been examined at a number of conferences in the last five years.[5-10] In these conferences repeated mention was made of a staff composed of representatives of three disciplines —a board-certified psychiatrist, a clinical psychologist with a master of arts or preferably a doctor of philosophy degree, and a social worker with a master's degree in that school.

Few voices have been raised in favor of any other class of staff member. But there have been a few such suggestions: Knowles[4] reported: "The nurse is an innovation. I had originally hired her, and for approximately sixteen months taught and supervised her. Since then the board of directors has placed her on the clinic's payroll where she functions chiefly as a child therapist and over 50 per cent of our actual time is spent in child psychiatry." And, Southard[11] wrote: "Except in one of the communities, we looked in vain for planned efforts to involve general practitioners in mental health work."

These approaches to ways to reduce the number of persons waiting for treatment, which is a problem of universal concern, led to the present communication. Attention is called to another category of therapists.

A review of the pamphlets already cited did not reveal what proportion of the conventional three-discipline teams are salaried. Most appear to be. Volunteers from other disciplines could obviously reduce the cost and afford care to more applicants for clinic guidance. In this connection it is insufficiently appreciated that less than 10 per cent of admissions to mental hygiene clinics in general (in a recent year it was 3 per cent in the Santa Barbara clinic) are persons disturbed enough to require expert psychiatric assessment with referral for hospital care.

During the ten years of my work there, the Mental Hygiene Clinic in Santa Barbara has had psychiatrists, psychologists and social workers, sometimes as volunteers, sometimes paid. Also we have had another category—physicians (all unpaid) who started in several fields and became active in what the British have so well called psychological medicine. One of them is board-eligible in psychiatry, one is board-certified in internal medicine and one board-certified in pediatrics. Two have been members of the American Psychiatric Association. Two have had personal analysis. All three, like most medical folk, have faced some psychotic patients, but all three have wished to work in a setting in which a certified psychiatrist was available to see, and if necessary to take over care of, patients who showed signs of crossing the borderline from mildly schizoid to dissociation from reality. These three have been occupied in child guidance, internal medicine and pediatrics; and for roughly 20, 15 and 5 years respectively have been engaged in psychotherapy of neurotic patients.

It is being increasingly appreciated that many patients with emotional problems consult their family physicians long before they are ever seen by a psychiatrist, and therefore most physicians use some kind of psychotherapy. This aspect was well brought out by the recent report of the Joint Commission on Mental Health, headed by Dr. Jack Ewalt of Massachusetts. Accordingly general practitioners and specialists are today playing extremely important roles in care of emotional needs of their patients, while sensitive to the occasional desirability of securing consultation with psychiatrists.

Chope,[2] whose replies to a letter I had written indicate the nature of my inquiries, said:

"The problems presented in your letter of inquiry are not uncommon and I did not wish to leave the impression that the organization of our psychosomatic clinic had been at any time completely endorsed by all the psychiatrists. The physician who operates our psychosomatic clinic has been a general practitioner, with a deep interest in psychotherapy and family counseling. He has had in his past his own personal analysis. Our psychiatric staff did not accept this background as being adequate to practice in all psychiatric procedures. However, he does operate his clinic with a psychiatric consultant, with whom he is able to discuss cases. He uses both direct and group therapy with the patients who are referred to him.

"On the important basis that it is under psychiatric supervision, the state department of mental hygiene seems willing to consider this type of service, although psychosomatic medicine per se is not covered by the Short-Doyle Act nor by the regu-

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From the Mental Hygiene Clinic, Santa Barbara.
Submitted June 21, 1960.

lations which govern the operation of Short-Doyle programs."

So far as I have been able to ascertain, the kind of service sketched in Dr. Chope's letter seems to have been ignored in state legislation for community mental health services, although it has long been recognized in university medical and surgical outpatient clinics that use of this class of therapists could greatly increase the personnel available for community clinics.

The value of various classes of the staff might be judged by several criteria. One is cost. Although cost of operation is not a principal concern of the present communication, we believe that at the Santa Barbara Mental Health Clinic our cost per patient admitted has been low because we have had a high proportion of the staff hours given by volunteers. Another criterion is the number of patients dealt with or the number of interviews. Either by itself is an unreliable basis for evaluation, for either datum of itself might appear to indicate creditable activity, whereas in fact it might reflect a demand exceeding supply of staff, with necessarily only cursory care.

A more dependable statistic would be the hours *given* by each category of staff; and far the most useful measure of the amount of service rendered to the public would be the hours *received*. These data for the latest four calendar years, 1956-1959, are as follows:

	Patients' Individual Hours, i.e., Hours Given	Patients' Hours-in-Group	Total Hours Received	Per Cent of 11,014 Hours
8 Psychiatrists	2,437	779	3,216	29
4 Psychologists	1,485	0	1,485	14
3 Social workers	1,244	0	1,244	11
3 Medical psychotherapists	1,580	3,489	5,069	46
			11,014	100

The point for emphasis is that 46 per cent of the total hours received by patients was given by three volunteer medical psychotherapists.

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ACKNOWLEDGMENT

For several years the work of tabulating the hours each month has been given by Mrs. Margaret J. Campbell.

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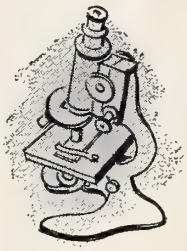

CASE REPORTS

Leiomyoma of the Rectum with Unusual Clinical Features

GERALD MASON FEIGEN, M.D., and
DONALD TRAUNER, M.D., San Francisco

LEIOMYOMAS in the lower rectum are rare, and although there have been some 72 cases reported since 1891, none similar to the case here reported was found. The unusual features of the case include presence of a fistula-like tract joining the lower pole of the tumor with the mucocutaneous line, and the clinical symptoms of constant pain in the ipsilateral hip, thigh and knee.

Leiomyoma of the rectum was first reported in 1881 by Vander Espt.[9] In 1921 Hunt[6] reported four new cases and reviewed 20 cases reported up to that time. In 1933 Hartmann, Bertrand-Fontaine and Guerin[5] reported a case and reviewed the literature, revealing that 37 cases had been reported by 1933. In 1934 Geschickter[3] surveyed muscle tumors of the gastrointestinal tract in the Johns-Hopkins Hospital and reported only one of twenty-five benign leiomyomas occurred in the rectum. Golden and Stout[4] in 1941 reported that five of thirty such tumors were located in the rectum.

The reports in the literature were reviewed with particular attention to the site of the lesion, the sex and, where given, the age of the patient. Stout,[7] reporting on 20 cases, noted that ten of the lesions were in the colon and ten in the rectum; there was no significant difference in sex incidence, and the age spread was from 10 years to 67 years. Anderson, Dockerty and Buie[1] reviewed ten cases recorded in the files of the Mayo Clinic from 1911 to 1946. The age range of patients was from 28 to 61 and there were seven women and one man. Swartzlander, Jackman and Dockerty[8] in a study of 91 submucosal rectal nodules discovered five leiomyomas, four in males, one in a female. In a series reported by Hartmann and co-workers,[5] 20 of the patients were females, 15 males.

REPORT OF A CASE

A 42-year-old white man was first observed September 25, 1959, with complaint of pain during defecation, vague rectal discomfort and a constant pain in the right hip radiating down the back of the right thigh to the knee. There was no change in bowel habit, no bleeding with bowel movement, no discharge of pus, no protrusion and no loss of weight.

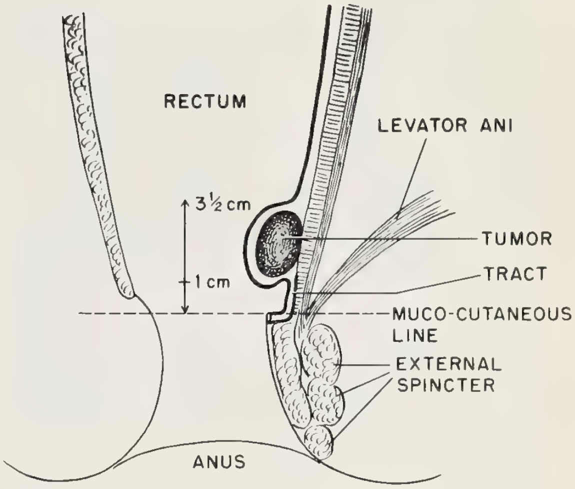

Figure 1.—Diagrammatic representation of location, size, and anatomical features of the tumor presented in present case.

On proctologic examination no abnormality was noted in the external perianal area. Upon digital palpation a firm mass about 2 cm. in diameter was felt in the right lateral rectal wall between 1 and 3.5 cm. from the mucocutaneous line. The tumor was slightly movable and was apparently submucosal. From the lower pole of the mass to the mucocutaneous line, a hard fibrous tract resembling a fistula was palpated (Figure 1). Milking the tract did not express any pus, and no apparent primary opening of a fistula was visualized. Through an anoscope a small bulging lesion was seen in the lower rectum. The color of the overlying mucosa was normal and there was no ulceration. No abnormality was noted on sigmoidoscopic inspection. X-ray films of the lower back and pelvis did not show evidence of pathologic changes that might account for the pain in the hip and thigh. Results of routine laboratory studies were all within normal limits and the patient was admitted to hospital October 4, 1959, with a preoperative diagnosis of rectal neoplasm and possible submucosal abscess and fistula.

From the Department of Ano-Rectal Surgery, Mount Zion Hospital and Medical Center, 1600 Divisadero Street, San Francisco 15.

Submitted July 26, 1960.

Figure 2.—Microscopic appearance of leiomyoma of rectum (×400). The tumor is quite cellular; it is composed of neoplastic smooth muscle cells arranged in interlacing bundles. The neoplastic cells vary slightly in size, shape and staining quality, and occasional mitosis is noted. There are a few small portions of nonneoplastic smooth muscle fibers. There is no evidence of malignant disease.

The mucosa overlying the mass was incised and the growth exposed. It was yellow-white and was encapsulated except at the lower pole. A probe inserted at the lower pole passed readily through a thin fibrous tract to an opening at the mucocutaneous line. No pus was seen. The tumor and the tract were excised, and an ellipse of anoderm was removed to provide drainage. In cutting the tract, some of the fibers of the internal sphincter were incised. Because of the possibility of infection, the wound in the rectum was not sutured. An Oxycel® pack was applied. The pathologist described the specimen as a cellular leiomyoma of the rectum with no evidence of malignant change (Figure 2). The patient recovered promptly and normal bowel habits soon resumed. Gradually the pain in the right thigh and knee subsided and in four weeks was gone. When last examined some five months later the operative site was completely healed and there was no evidence of local recurrence.

DISCUSSION

Summarizing the clinical findings in reported cases, one can conclude that leiomyomas of the rectum are rare tumors, usually without clinical symptoms, occurring as early as the first decade of life and as late as the seventh, but most commonly in the fourth and fifth decades, with a slight predilection for females. They usually are within 3 cm. of the mucocutaneous line, are yellow-white in color, and average about 1.5 cm. in diameter. They are intramural or submucosal, and never ulcerate or bleed. When locally excised they tend to recur, and they are disposed to undergo malignant change, becoming leiomyosarcoma.

SUMMARY

A case of leiomyoma of the rectum with unusual features is described and the literature reviewed.

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EDITORIAL

Future Physician Recruitment

In adopting a program of scholarships for secondary school students and college undergraduates and of loans for students in medical schools, the House of Delegates of the American Medical Association at its mid-winter meeting strengthened the hand of the medical profession for the bidding it must do to persuade the best qualified students to take up the study of medicine.

This program grew out of studies that were begun when medical leaders became aware that with population growing apace and the relative number of competent students seeking medical training declining, a shortage of physicians appeared to be in the making. We in California, where growth in population is a pressing fact and where we have five medical schools seeking apt students for enrollment, must have particular concern with this problem.

Traditionally bound to maintain both the quality and the adequacy of supply of medical care, the A.M.A. set a Special Study Committee of the Council on Medical Education and Hospitals to the task of finding out what the future needs in this regard are likely to be and how to meet them.

From its investigations the committee concluded:

> **There is a decline in the number and quality of eligible college students manifesting a serious interest in medicine as a career.**
>
> **This apparent shift away from medicine is due in part to the high cost in time and money of securing a medical education.**
>
> **The trend has been heightened by a dramatic emphasis on careers in science and engineering which are stressed by the urgency of certain domestic and international issues.**
>
> **The cost of post-baccalaureate education in other sciences is usually much less than the cost of a medical education.**
>
> **An affluence of scholarships, fellowships and other financial aids for graduate students in many fields is in striking contrast to a relative paucity of similar financial assistance available to students in medicine.**
>
> **These circumstances weaken the appeal of medical education at a time when it is predicted that the national population will be increased by as much as 55 million in 15 years.**

To help bring the medical profession into a better competitive position for attracting students of the kind needed to make good physicians, the committee proposed two interrelated programs. One of them is a simple plan for giving medical students borrowing power to finance their education once they are enrolled in medical school. The other, a student honors program, is potentially a factor that can be of much greater importance in the recruitment of the kind and the number of students the medical profession would like to prepare for physicianship, for it begins with persons at lower age levels when supposedly they are just making up their minds as to goals and the courses they will have to set to reach them.

The committee wrote the following brief descriptions of these programs:

> **A *student loan program* designed to alleviate the financial difficulties of medical students and encourage career decisions in favor of medicine by utilizing the principle of a security fund functioning as a cosigning agency to make available through community banks relatively large sums of credit at a low rate of interest to medical students.**
>
> **A *student honors program* designed to focus attention on careers in medicine, to attract a substantial group of able students to prepare for admission to medical school, and (with a built-in scholarship plan) to assist financially a limited number of outstanding students (selected on a geographic basis) who for financial reasons are unable to pursue an education for a career in medicine.**

The usefulness of the loan program is obvious: It has the importance that any sensible plan of financing a need always has.

Perhaps less obvious are some of the resources of the student honors program. The program, as adopted by the House of Delegates, contemplates a plan that would first present to able secondary school and college students a picture of the great opportunity they could have for the best use of themselves in the profession of medicine, and then would encourage outstanding college students with a sincere interest in a career in medicine to apply for designation as A.M.A. scholars. Some 250 honor scholars would be chosen each year. Besides the honor of being among the elite so designated, the needy among them could qualify to receive A.M.A. scholarships in the form of nonrefundable grants of a thousand dollars a year for four years in medical school. It is anticipated that the A.M.A. would make available $50,000 for such awards the first year, $100,000 the second, $150,000 the third and $200,000 the fourth year and thereafter.

Obviously not all of the honor scholars will need the money award, nor will the money be of paramount importance to either the students or to the uses to which the medical profession can put this part of the plan.

Of far greater importance is the esprit de corps that can be developed among the recipients of the honor. More, the opportunities that representatives of medicine will have to deal with educational leaders, with faculty advisors and with the undergraduates themselves in the description and administration of this program should be very helpful in the recruitment of the exceptional students needed to extend the advances of medical science.

It is to be hoped that the action of the A.M.A. will stimulate other medical organizations—state and county societies, for example—to give local support to the A.M.A. plan or to devise their own programs to be used in their own communities for recruitment of students of high standing. They might well find ways to provide counsel and preceptorship for local young people who are good candidates for medical education. Perhaps even nonmedical community service clubs will give special attention to students of their community who are chosen as A.M.A. honor scholars.

One unimportant but pleasant dividend that comes from the A.M.A.'s action is that it gives rest to the slander, still occasionally heard, that the practitioners of medicine seek to limit the number of new physicians.

Quite apart from the results to be expected of this program adopted by the House of Delegates, the medical profession can take warm pride in the fact that it has acted in its traditional acceptance of a substantial share of the responsibility for the recruitment and education of its successors.

Letters to the Editor...

Your editorial, Relative Value Study, in the October issue of California Medicine, properly gives all due credit to the California Medical Association's major role in promulgating, demonstrating, and disseminating this sensible and important way of relating physician's fees for various services to one another.

Your members who worked out the original 1956 schedule may recall that a fairly complete relative value schedule drawn up by a committee of the Hawaii Medical Association in 1948, under the chairmanship of Dr. Steele F. Stewart, was given to Dr. William L. Bender in San Francisco for such use as the California Medical Association might wish to make of it. It had already been printed, but the Honolulu County Medical Society had achieved a sort of immortality by rejecting it on October 29, 1948, by a vote of 45 to 4, with 45 abstaining. It was rejected not on its merits but as a consequence of an internecine quarrel.

The schedule, which was the brain child of Dr. Stewart, was formulated by a committee consisting of Drs. F. J. Pinkerton, Joseph E. Strode, Joseph Palma and Louis Gaspar. It expressed all fees in relative unit values, with a conversion factor which was intended to rise with the federal cost-of-living index.

As someone has said: Nothing is more powerful than an idea which is expressed at the right time.

Sincerely yours,
Harry L. Arnold, Jr., M.D.

Honolulu

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Minutes of the 463rd Meeting of the Council, Los Angeles, Biltmore Hotel, October 22, 1960.

The meeting was called to order by Chairman Sherman in Conference Room No. 8 of the Biltmore Hotel, Los Angeles, on Saturday, October 22, 1960, at 9:30 a.m.

Roll Call:

Present were President Foster, President-Elect Bostick, Editor Wilbur, Speaker Doyle and Councilors MacLaggan, Wheeler, Todd, Quinn, O'Neill, Kirchner, O'Connor, Rogers, Dalton, Murray, Davis, Miller, Sherman, Morrison, Anderson and Teall. Absent for cause, Vice-Speaker Heron, Secretary Hosmer and Councilors Shaw and Campbell.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Clancy, Collins, Marvin, Whelan and Tobitt and Drs. Batchelder and Miller of C.M.A. staff; Messrs. Hassard and Huber of legal counsel; Eugene Salisbury of the Public Health League; county executives Scheuber of Alameda-Contra Costa, Geisert of Kern, Field of Los Angeles, Grove of Monterey, Somerville of Napa, Bannister of Orange, Brayer of Riverside, Dochterman of Sacramento, Donmyer of San Bernardino, Nute and Burris of San Diego, Neick of San Francisco, Thompson of San Joaquin, Wood of San Mateo, Donovan of Santa Clara, Dermott and Brown of Sonoma, Blankfort of Marin; Dr. Malcolm Merrill, director, and Dr. H. C. Pulley, associate director, of the State Department of Public Health; Dr. Daniel Blain, State Director of Mental Hygiene; Mrs. Eunice Evans of the State Department of Social Welfare; Richard Lyon and Etchel Paolini of California Physicians' Service; Dr. Stafford Warren, dean of University of California at Los Angeles School of Medicine; Doctors Clyde L. Boice, Dan O. Kilroy, Malcolm Watts, Douglas Donath and others.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 462nd meeting of the Council, held in San Francisco on September 10, 1960, were amended and approved.

2. *Membership:*

(a) A report of membership as of October 19 was presented and ordered filed.

(b) On motion duly made and seconded, 21 delinquent members whose dues had been received since September 10, 1960, were voted reinstatement.

(c) On motion duly made and seconded in each instance, 14 applicants were elected to Associate Membership. These were: Henry W. Daine, C. Henry Murphy, Alameda-Contra Costa County; Wesley Michael Groves, Leonard P. Haber, Lillian Hall, Arthur J. Riesenfeld, Los Angeles County; Richard Handy, Napa County; Robert S. Livingston, San Bernardino; Donald H. Robinson, San Francisco; Carr Eugene Bentel, Stanislaus County; Elwood V. Boger, Geza Schinagel, Joan H. Shalack, Walter R. Townsend, Ventura County.

(d) On motion duly made and seconded in each instance, six members were voted Retired Member-

PAUL D. FOSTER, M.D.	President
WARREN L. BOSTICK, M.D.	President-Elect
JAMES C. DOYLE, M.D.	Speaker
IVAN C. HERON, M.D.	Vice-Speaker
SAMUEL R. SHERMAN, M.D.	Chairman of the Council
RALPH C. TEALL, M.D.	Vice-Chairman of the Council
MATTHEW N. HOSMER, M.D.	Secretary
DWIGHT L. WILBUR, M.D.	Editor
HOWARD HASSARD	Executive Director
JOHN HUNTON	Executive Secretary

General Office, 693 Sutter Street, San Francisco 2 • PRospect 6-9400

ED CLANCY	Director of Public Relations

Southern California Office:
2975 Wilshire Boulevard, Los Angeles 5 • DUnkirk 5-2341

ship. These were: Bruce M. Stephens, Alameda-Contra Costa County; Benjamin Goldberg, J. Mark Lacey, Bernard L. Wyatt, Los Angeles County; Gwendolyn Campion, Marin County; Harry G. Huffman, Orange County.

(e) On motion duly made and seconded in each instance, the dues of 19 members were reduced because of prolonged illness or postgraduate study.

3. *County Officers' Conference—1961:*

Councilor Todd, chairman of an ad hoc committee, reported on plans being discussed for the 1961 conference of county society officers. The date has been set for February 11, 1961, with the possibility of utilizing two days for the session. A further report is to be made.

4. *Governor's Conference on Health:*

Mr. Hassard and Doctors Watts and Kirchner reported on the Governor's Conference on Health, held in Sacramento October 3 and 4. The report of this conference will become a part of the information for the President's Conference on Health, to be held in Washington in January, 1961.

5. *Medical Schools:*

Dr. Stafford L. Warren, dean of the University of California at Los Angeles School of Medicine, discussed the need for training additional physicians in California and pointed out the various factors which may affect the cost of training physicians.

Doctor Malcolm Watts, Associate Dean of University of California School of Medicine, also discussed the cost factors and the fact that a medical school also trains nurses, technicians and others, as well as conducting research activities.

6. *State Department of Mental Hygiene:*

Doctor Daniel Blain, State Director of Mental Hygiene, thanked the Council for its support and expressed the wish to continue liaison with the Committee on Mental Health and other appropriate committees, especially in advance of the 1961 session of the State Legislature.

7. *State Department of Public Health:*

Doctor Malcolm Merrill, State Director of Public Health, introduced Doctor H. C. Pulley, newly appointed Assistant Director of the Department.

Doctor Merrill reported that allocations of $8,318,624 in federal funds had been made for hospital and allied construction, including funds for ten general hospitals, three neuropsychiatric institutions, two nursing homes, two diagnostic and treatment facilities, five health centers and two rehabilitation facilities. State funds will match federal funds in this program.

He also reported that the department was continuing its pressure for poliomyelitis vaccinations with Salk vaccine, that it was working with the State Department of Social Welfare on the preparation of standards to be used in evaluating facilities for rehabilitation programs and was working with the Governor's committee studying agricultural chemicals.

8. *State Department of Social Welfare:*

Mrs. Eunice Evans, Assistant Director of the State Department of Social Welfare, reported that new programs to furnish eye care for public assistance recipients had been made effective October 1 and that additional services in dentistry will be in effect on November 1. She also stated that there were many unknown factors in the prospective plans for medical services for medical indigents, but that it was estimated that the demand would be for acute, rather than chronic, conditions. Mrs. Evans also reported that the department was looking into the possibility of a prepayment plan for the care of this group.

9. *Public Relations:*

Doctor Malcolm Watts, Chairman of the Committee on Public Relations, requested authority to retain Mr. Larry Williams as producer of television programs for the committee. On motion duly made and seconded, this authority was voted.

Doctor Watts also reported that the committee and Mr. Williams had agreed that if the television programs are marketed in other areas, the Association is to retain ownership rights and the first receipts from such sales are to be used to reimburse the Association and the producer for their costs. Funds in excess of these costs would then be distributed two-thirds to the Association and one-third to the producer. On motion duly made and seconded, this arrangement was approved.

Doctor Watts and Doctor Douglas Donath, chairman of the steering committee for public relations, discussed the approach approved by the committee, utilizing the District Councilor, his appointee to the steering committee and the staff coordinator. In response to a question on the adequacy of staff, Mr. Hassard pointed out that all staff executives have been assigned to specific areas of the state and were available to assist in the public relations work in their areas.

On motion duly made and seconded, it was voted that the Public Relations Steering Committee as such be discharged and that a new subcommittee of the Committee on Public Relations be formed on the following bases: (1) that it function to encourage and assist county societies to activate specific public relations programs at the county level, (2) that the membership of this subcommittee be selected by the District Councilors in collaboration with the Chairman of the Council, the Chairman of the Committee on Public Relations and the Chairman of the present Steering Committee, and (3) that the membership be adequate to accomplish this purpose in each Councilor District.

10. *Mental Health:*

Councilor Teall reported, as chairman of an ad hoc committee, that he had attended a hearing called by the State Director of Mental Hygiene, to evaluate the responsibilities of the counties for mental health care under the terms of existing state legislation (Short-Doyle).

11. *Financial:*

In behalf of the Finance Committee, Mr. Hunton presented and discussed several financial reports, including balance sheets of the Association and allied organizations, operating statements for the first three months of the fiscal year and projections of cash positions for all these organizations to the end of the calendar year. He also reported that a new corporation was being formed to handle publications of the Association. On motion duly made and seconded, it was voted to refer this last proposal to the Finance Committee, together with questions regarding reimbursement of representatives at official health conferences.

12. *Committee on Committees:*

Chairman Bostick of the Committee on Committees presented several appointments approved by the committee. On motion duly made and seconded in each instance, these appointments were approved. (See page 371).

13. *Commission on Community Health Services:*

Chairman MacLaggan of the Commission on Community Health Services, reported that the Joint Council for the Health Care of the Aged had thanked the Association for its services in inaugurating the council and had offered to share on a pro rata basis any future expenses incurred. On motion duly made and seconded, this offer was referred to the Finance Committee.

On motion duly made and seconded, it was voted to approve in principle the guides prepared by the joint council for the guidance of county medical societies and district dental societies in cooperating with state aid programs and to approve the sending of these guides to the county societies.

Doctor MacLaggan also presented the proposal of the Committee on Traffic Safety whereby automobile seat belts would be made available to members at about half the usual retail cost. On motion duly made and seconded, this proposal was approved.

He also reported that the Guiding Principles for Physician-Hospital Relations had been approved in some counties with some enforcement sections deleted. It was pointed out that for these principles to be effective in providing self-government in this field, a statewide, uniform acceptance was essential.

Doctor MacLaggan also presented a set of guides for physicians participating in the activities of voluntary health agencies. On motion duly made and seconded, these guides were approved in principle.

14. *Ad Hoc Committee on Continuing Education and Scientific Activities*

Chairman Wilbur gave a progress report on the activities of this ad hoc committee and pointed out some of the areas being studied. A definitive report is expected to be prepared and released prior to the 1961 Annual Session.

15. *California Physicians' Service*

Doctor John G. Morrison reported that California Physicians' Service is experimenting in (1) the provision of home nursing care as an alternative to extended hospital stays, using Riverside County as the pilot area, and (2) the provision of in-patient psychiatric care.

Doctor Morrison also reported that the beneficiary membership, including federal employees and dependents, is now about 980,000 and physician membership is 14,747.

16. *Commission on Public Agencies:*

Chairman Wheeler of the Commission on Public Agencies reported on a health survey being carried on by the U. S. Public Health Service.

Doctor Wheeler also presented a report of the Committee on Other Professions on schools of nursing. The report was received with the understanding that a further report on this subject would be made in January.

Doctor Wheeler also reported that the California Pharmaceutical Association was seeking liaison on proposed legislation relating to the ownership of pharmacies and that this subject had been discussed with Mr. Hassard and with the Committee on Committees. On motion duly made and seconded, it was voted that a liaison committee should be established, under the Committee on Other Professions. The committee will consist of Councilor Miller, chairman, Doctors J. P. Sampson, John B. Lagen, Ralph Weilerstein and a fifth member to be named later.

17. *C.M.A. Staff Report*

Mr. Hassard reported that Mr. Murray Klutch has been employed as research director and will start work about December 1. He also reported that the activities of the Public Relations department had been divided into four sections, two of which will be under the supervision of Ed Clancy and one each under Robert Marvin and William Tobitt.

18. *Legal Department:*

Mr. Hassard reported that the California Supreme Court had affirmed a decision of the appeals court, finding Cutter Laboratories not guilty of wrongful acts but still liable for damages suffered by two minors who had received poliomyelitis vaccine produced by Cutter. He pointed out that this decision is in line with court trends which follow a theory of implied warranty by the producer of items from which others may suffer loss.

19. *Report of the President:*

President Foster reported on the activities of the Governor's Committee on Medical Aid and Health, of which he was a member. The committee's work has now been completed and a report prepared for the Governor. Doctor Foster also introduced to the Council Doctor Roger Egeberg, chairman of the committee.

20. *Report of the President-Elect:*

President-Elect Bostick presented the question posed by state officials who are considering a uniform schedule of fees to be paid for medical services provided under several state programs and urged that authorization be given to a properly constituted body to discuss this matter with the state officers. On motion duly made and seconded, it was voted that the Committee on Government-Financed Medical Care be empowered to proceed on this matter by presenting to state officials the regional factors developed under the Relative Value Studies as representing the level of fees in common use in various areas of the state.

21. *Committee on Legislation:*

Doctor Dan O. Kilroy, chairman of the Committee on Legislation, reported on several measures proposed by the Board of Medical Examiners for introduction into the 1961 legislative session. On a proposal to permit the board to suspend the license of a physician seeking treatment at a private mental hospital, it was regularly moved, seconded and voted to refer this to the Committee on Legislation and the Committee on Mental Health for their joint consideration.

(Present laws permit the Board to suspend the license of a physician who is committed to a public institution but do not make the same provision where a private hospital is used.)

A proposal to change "internship" to "service in a hospital satisfactory to the Board" was approved for licensing purposes.

Doctor Kilroy also reported on other legislative proposals which are expected to be introduced and on which Association policy has previously been expressed.

22. *New and Miscellaneous Business:*

(a) A resolution from the Los Angeles County Medical Association, urging the use of generic terms in drug prescriptions, was regularly moved, seconded and voted referred to the special committee established under Item No. 16 above.

(b) A resolution from the Los Angeles County Medical Association, relating to proper faculty members for health education in the public schools, was regularly moved, seconded and voted referred to the Committee on School Health.

(c) On motion duly made and seconded, a list of guest speakers for the 1961 Annual Session, as submitted by the Committee on Scientific Work, was approved.

(d) A proposal by Doctor William J. Kerr, retired chief of the Department of Medicine at University of California Medical School, to supply the Association with gavels made of native wood, for presentation to the incoming President, was received and it was regularly moved, seconded and voted to accept this offer with thanks and to invite Doctor Kerr to attend the 1961 Annual Session to make the inaugural presentation.

(e) A request for use of the mailing list in behalf of a hospital facility was presented and on motion duly made and seconded, was denied.

(f) A suggestion for nomination of a California physician for selection as "General Practitioner of the Year" at the A.M.A. meeting was received and it was agreed that time did not permit such nomination to be prepared and forwarded this year.

Time and Place of Next Meeting:

The Chairman announced that the next meeting would be held in San Francisco on December 10, 1960, unless incoming business indicated the desirability of an earlier meeting.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:55 p.m.

Samuel R. Sherman, M.D., *Chairman*
John Hunton, *Acting Secretary*

PROPOSED CONSTITUTIONAL AMENDMENT

One proposed amendment to the Constitution of the California Medical Association was introduced in the 1960 House of Delegates. In accordance with requirements of the Constitution, this proposed amendment must lie on the table for one year, during which time it must be published in two issues of CALIFORNIA MEDICINE.

In the 1961 House of Delegates, this proposed amendment will be reviewed by a Reference Committee and reported back to the House of Delegates with the recommendation of that committee for approval or disapproval.

Proposed amendments to the Constitution may not be amended following their introduction but are voted on in the form in which they are introduced. A two-thirds affirmative vote in the House of Delegates is required for passage.

Author: C. J. Attwood.
Representing: Constitution Study Committee.

Resolved: That Article VIII, Section 3, of the Constitution be amended by deleting the final paragraph of the section, starting with the words "Further, such amendment . . ." and concluding with the words "prior to submission to the House of Delegates for vote." and substituting therefor the following:

"Further, such proposed amendment or amendments shall be referred to the appropriate reference committee, which shall hold hearings on the proposed amendment or amendments during the course of its regular business while the Association is in convention.

"If the proposal or proposals are introduced during the first meeting of the House, hearings shall be held at both the current and the next regular session. In this event, the reference committee shall report at a subsequent meeting of the House at the current session its findings and recommendations on the proposed amendment or amendments; this report shall be solely for the guidance of the reference committee and the House at the regular session at which the amendment or amendments are to be subject to vote. The reference committee at the current session may, with the consent of the author of proposed amendment or amendments, alter, amend or modify the proposed amendment or amendments and offer such altered version at a later meeting during the current session, together with its recommendations thereon.

"If the proposal or proposals are introduced during the second meeting of the House, hearings on them shall be held at the next regular session, prior to their submission to the House of Delegates for vote."

COMMISSION AND COMMITTEE APPOINTMENTS

October 22, 1960

Committee on Scientific Work:

Daniel Morton, Los Angeles, to replace Thomas H. Brem, resigned.

Sub-Committee on Radio, TV and Motion Pictures:

Additional members appointed: Warren L. Bostick, San Rafael; James C. MacLaggan, San Diego.

Advisory Committee to California Medical Assistants Association:

Sanford E. Feldman, San Francisco, to replace Byron L. Gifford, Santa Barbara, resigned. The terms of the men on this advisory committee are to be staggered one- to three-year terms and the committee will be asked for a report prior to the Annual Session.

Committee on Industrial Health:

Additions to the Committee: David D. Holaday, San Anselmo; Carl E. Anderson, Santa Rosa.

Committee on State Medical Services:

William C. Hickey, Sacramento, to replace R. William Draper, deceased.

Inspection Corporation of the Joint Council to Improve the Health Care of the Aged:

CMA representatives appointed: Pierre Salmon, San Mateo; Charles E. Schoff, Jr., Sacramento.

Liaison Committee to the Department of Health, Education and Welfare:

Wilbur G. Rogers, Glendale, to replace Byron Gifford, resigned. Additional members: Gerald W. Shaw, Santa Monica; Donald Rosman, Los Angeles.

Liaison Committee to California Pharmaceutical Association (to be a sub-committee of the Committee on Other Professions):

Albert G. Miller, Chairman, San Mateo; John B. Lagen, San Francisco; J. Philip Sampson, Santa Monica; Ralph W. Weilerstein, San Francisco.

California Medical Association

1961

Annual Session

AMBASSADOR HOTEL • LOS ANGELES

APRIL 30 to MAY 3

- Five Outstanding Guest Speakers
- General Scientific Meetings
- Specialty Scientific Meetings
- Postgraduate Courses
- Medical Motion Picture Symposia
- Technical Exhibits • Scientific Exhibits
- Presidents' Dinner Dance
  Sunday, April 30 • Cocoanut Grove
- House of Delegates
  Opening Session Saturday, 2:00 p.m., April 29
  Sunday, April 30, Tuesday Afternoon, May 2, and Wednesday, May 3
- Registration Daily
  8:30 a.m. to 5:00 p.m. . . . No Registration Fee

PLEASE MAKE HOTEL ROOM RESERVATIONS ONLY THROUGH C.M.A. OFFICE IN SAN FRANCISCO. USE RESERVATION REQUEST FORM ON PAGE 373.

APPLICATION FOR HOUSING ACCOMMODATIONS

FOR YOUR CONVENIENCE in making hotel reservations for the coming meeting of the **California Medical Association,** April 30*-May 3, 1961, Los Angeles, hotels and their rates are at the right. Use the form at the bottom of this page, indicating your first and second choice. Because of the limited number of single rooms available, your chance of securing accommodations of your choice will be better if your request calls for rooms to be occupied by two or more persons. **All requests for reservations must give definite date and hour of arrival as well as definite date and approximate hour of departure; also names and addresses of all occupants of hotel rooms must be included.**

Ninetieth Annual Session

CALIFORNIA MEDICAL ASSOCIATION

Los Angeles, California

APRIL 30*-MAY 3, 1961

HOTEL ROOM RATES†

	Single	Twin Beds	Suites
AMBASSADOR HOTEL			
3400 Wilshire Boulevard			
Main Building	14.00-24.00	18.00-28.00	40.00-58.00
Garden Studios	22.00-34.00	24.00-36.00	54.00-66.00
CHAPMAN PARK HOTEL			
3405 Wilshire Boulevard	10.00-11.00	14.00-16.00	20.00-28.00
Bungalows		18.00	25.00-28.00
THE GAYLORD HOTEL			
3355 Wilshire Boulevard	9.00-10.00	12.00-15.00	Single: 25.00 Double: 35.00
HOTEL CHANCELLOR			
3191 West Seventh Street	8.00-10.00	12.00	
SHERATON-WEST (formerly Sheraton-Town House)			
2961 Wilshire Boulevard	12.50-20.00	17.50	34.00

ALL RESERVATIONS MUST BE RECEIVED BEFORE: APRIL 1, 1961

***April 29: House of Delegates will start with afternoon meeting Saturday, April 29.**

†The above quoted rates are existing rates but are subject to any change which may be made in the future.

CALIFORNIA MEDICAL ASSOCIATION—Dept. 74
693 Sutter Street
San Francisco 2, California

Please reserve the following accommodations for the 90th Annual Session of the California Medical Association, in Los Angeles April 30-May 3, 1961. (House of Delegates members: First meeting of House begins Saturday afternoon, April 29.)

Single Room $........................ Twin-Bedded Room $........................

Small Suite $........................ Large Suite $........................ Other Type of Room $........................

First Choice Hotel........................ Second Choice Hotel........................

ARRIVING AT HOTEL (date):........................Hour:..........A.M...........P.M.

Leaving (date)........................Hour:..........A.M...........P.M.

Hotel reservations will be held until 6:00 p.m., unless otherwise notified

THE NAME OF EACH HOTEL GUEST MUST BE LISTED. Therefore, please include the names of both persons for each twin-bedded room requested. Names and addresses of all persons for whom you are requesting reservations and who will occupy the rooms asked for:

Individual Requesting Reservations—Please print or type

Officer?.......... Delegate?.......... Alternate?..........

Name........................ County........................

Address........................ City and State........................

In Memoriam

Chalek, Jack I. Died in Los Angeles September 9, 1960, aged 51, of heart disease. Graduate of the University of Minnesota Medical School, Minneapolis, 1938. Licensed in California in 1945. Doctor Chalek was a member of the Los Angeles County Medical Association.

✤

Clark, Warren Fullerton. Died in Palm Springs, October 22, 1960, aged 71, of a heart attack. Graduate of Queen's University Faculty of Medicine, Kingston, Ontario, Canada, 1920. Licensed in California in 1922. Doctor Clark was a member of the Los Angeles County Medical Association.

✤

Colby, Elliott Gillette. Died in New York, November 8, 1960, aged 63. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1922. Licensed in California in 1922. Doctor Colby was a member of the San Diego County Medical Society.

✤

Draper, Rue William. Died October 16, 1960, aged 39. Graduate of the University of Edinburgh Faculty of Medicine, Scotland, 1943. Licensed in California in 1952. Doctor Draper was a member of the Sacramento Society for Medical Improvement.

✤

Fergus, LeRoy Clark. Died in Los Banos, July 19, 1960, aged 50, of coronary thrombosis. Graduate of the Medical College of Virginia, Richmond, 1935. Licensed in California in 1947. Doctor Fergus was a member of the Merced County Medical Society.

✤

Garrison, Everett Jesse. Died in Riverside, September 28, 1960, aged 63. Graduate of the University of Nebraska College of Medicine, Omaha, 1933. Licensed in California in 1936. Doctor Garrison was a member of the Riverside County Medical Association.

✤

Goodman, Max. Died in Los Angeles, October 22, 1960, aged 50. Graduate of Tufts University School of Medicine, Boston, Massachusetts, 1937. Licensed in California in 1946. Doctor Goodman was a member of the San Bernardino County Medical Society.

✤

Harrington, Harrel Lee. Died October 24, 1960, aged 49, of cancer. Graduate of the University of Toronto Faculty of Medicine, Ontario, Canada, 1935. Licensed in California in 1940. Doctor Harrington was a member of the Alameda-Contra Costa Medical Association.

✤

Laughton, J. Laverne (Joseph L.). Died in Gridley, October 29, 1960, aged 65, of a heart attack. Graduate of the University of Toronto Faculty of Medicine, Ontario, Canada, 1928. Licensed in California in 1929. Doctor Laughton was a member of the San Francisco Medical Society.

✤

Manuel, Donald Clyde. Died in Redding, November 1, 1960, aged 44, of myocardial infarction. Graduate of the University of Louisville School of Medicine, Kentucky, 1946. Licensed in California in 1954. Doctor Manuel was a member of the Shasta-Trinity County Medical Society.

Midkiff, Layton Duane. Died in Vallejo, September 8, 1960, aged 46, of heart disease. Graduate of Stanford University School of Medicine, Stanford-San Francisco, 1945. Licensed in California in 1947. Doctor Midkiff was a member of the Alameda-Contra Costa Medical Association.

✤

Morrow, Allen. Died September 28, 1960. Graduate of the University of California, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Morrow was a retired member of the Alameda-Contra Costa Medical Association, and the California Medical Association, and an associate member of the American Medical Association.

✤

Parsons, Susanne Ring (Dolman). Died October 26, 1960, aged 68. Graduate of Johns Hopkins University School of Medicine, Baltimore, Maryland, 1920. Licensed in California in 1929. Doctor Parsons was a member of the Santa Barbara County Medical Society.

✤

Roncovieri, Louis D. Died in San Francisco, October 21, 1960, aged 69. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1915. Licensed in California in 1915. Doctor Roncovieri was a member of the San Francisco Medical Society.

✤

Schmidt, Adele Sophie. Died November 1, 1960, aged 62, of cancer. Graduate of the University of California School of Medicine, Berkeley-San Francisco, 1934. Licensed in California in 1934. Doctor Schmidt was a member of the Los Angeles County Medical Association.

✤

Thayer, Lyman Elanson. Died in Everett, Washington, October 23, 1960, aged 80. Graduate of the College of Physicians and Surgeons, Los Angeles, 1915. Licensed in California in 1915. Doctor Thayer was a retired member of the San Bernardino County Medical Society and the California Medical Association, and an associate member of the American Medical Association.

✤

Walker, Homer M. Died in Lompoc, June 18, 1960, aged 78, of cerebral thrombosis. Graduate of Kansas City Medical College, Missouri, 1905. Licensed in California in 1919. Doctor Walker was a retired member of the Los Angeles County Medical Association and the California Medical Association, and an associate member of the American Medical Association.

✤

Walker, Robert Allyn. Died in Alhambra, October 7, 1960, aged 69, of pneumonia. Graduate of the University of Illinois College of Medicine, Chicago, 1917. Licensed in California in 1920. Doctor Walker was a member of the Los Angeles County Medical Association.

✤

Young, Calvin Lessey. Died in an auto crash in Woodside, October 30, 1960, aged 37. Graduate of the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1951. Licensed in California in 1955. Doctor Young was a member of the San Mateo County Medical Society.

PUBLIC HEALTH REPORT

MALCOLM H. MERRILL, *M.D., M.P.H.*
Director, State Department of Public Health

INFECTIOUS HEPATITIS in California is on the increase, 4,084 cases having been reported so far this year, some 1,400 cases more than the 2,621 for all 1959. This follows a national trend which has seen an increase in cases annually since 1958.

These cases are spread throughout the state; 1,808 were reported from the Los Angeles metropolitan area, 867 from the San Francisco Bay area, and 497 from San Joaquin Valley.

The fluctuation in number of cases in individual counties is due to localized epidemics in some instances. In Alameda County two outbreaks occurred in housing projects. In Tulare County a number of cases were reported from an Indian reservation. These are isolated instances, however, and do not entirely explain the decided increase in the total of reported cases.

Two questions arise from observations of these data: Are we approaching a new endemic level, similar to 1954? Is the increase real, or is it a reflection of better diagnosis and better reporting?

There have been requests for clarification of the position of this department regarding the recommended dosage of gamma globulin for protection of persons exposed to infectious hepatitis.

Study of the literature discloses conflicting evidence on dosage. Therefore, the State Health Department still urges deferment at this time of any change in the presently recommended dose of gamma globulin used for infectious hepatitis prophylaxis.

* * *

The department's annual influenza surveillance program got under way again this month, with eight local health departments participating in the reporting of school absenteeism and any unusual accumulation of respiratory disease.

Other indices to measure incidence of respiratory disease include absenteeism in selected industries, requests for laboratory tests for influenza, and bed occupancy in selected hospitals.

If experience can be used as a guide, no major influenza epidemics are anticipated this year. An extensive epidemic of influenza type A occurred last season, predominantly in January and February. In the past, major epidemics tended to recur only every second or third season.

* * *

This has been a relatively low-incidence year for arthropod-borne encephalitis, with a total of 12 cases confirmed by laboratory test. Eleven were St. Louis encephalitis and one western viral.

Only twice in the past 15 years, 1948 and 1955, have fewer than 12 cases been reported. This year's cases have occurred in the endemic areas of the state: Imperial Valley, 3 cases; Sacramento Valley, 2; San Joaquin Valley, 7. The only concentration of cases occurred in the vicinity of Fresno between late August and mid-September. Five of eight suspected cases were proved by laboratory tests to be of the St. Louis type.

* * *

The department's chronic disease control program, headed by Dr. Lester Breslow, chief of the Division of Preventive Medical Services, was presented an Albert Lasker Group Award in Public Health at the annual meeting of the American Public Health Association in San Francisco this month.

The award, the highest in public health, was in recognition of a concept, an organization, and a public health physician. It was pointed out that this program, begun in California in 1946, was among the earliest organized programs for the control of chronic disease by an official public health agency in this country.

* * *

The National Institute of Health is soliciting cooperation of private physicians in its new studies of colon and rectal carcinoma. Patients accepted for clinical investigation must be ambulatory; must have normal leukocyte count and renal and hepatic function, and have metastatic lesions in the lung, peripheral lymph nodes or skin.

Physicians having patients whom they wish to be admitted for these studies should communicate with Dr. Clyde O. Brindley or Dr. Paul P. Carbone, National Cancer Institute, Bethesda 14, Maryland.

MEDICAL JURISPRUDENCE

Limited Liability for Directions To Use a Medicine in an "Acceptable" Way

HOWARD HASSARD, *Peart, Baraty & Hassard, General Counsel, California Medical Association, San Francisco*

IN THE CASE of *Gielski v. the State of New York** action was brought against the state for personal injuries sustained by a 25-year-old farmer because of total paralysis below the tenth vertebra, as a result of intraspinal injection by the plaintiff's own physician of tetanus anti-toxin serum, made and distributed to physicians, free of charge, with accompanying instructions, by the State Department of Public Health.

The instructions of the State Department of Public Health distributed with each package of the serum stated that there were three methods for administering the tetanus anti-toxin serum, and that there was a considerable difference of opinion as to which is the more effective route, but that on the basis of reports received, combined intravenous and intraspinal administration appeared to have an advantage.

The plaintiff claimed the state was negligent in making the latter statement. Substantial medical opinion was introduced that the great weight of medical opinion condemned the intraspinal administration of tetanus anti-toxin for therapeutic purposes. The trial court found for the plaintiff, on the basis that the state must be required to keep up with modern medical theories and procedures.

The appellate court reversed the decision and held that medicine is not an exact science, and that there is a difference of respectable, medical opinion as to the most effective method to administer tetanus anti-toxin serum. The court further stated:

"The record demonstrates that medical opinion and medical textbooks differ on the subject. By honestly accepting one field of responsible medical opinion, though others, and perhaps more numerous, medical opinions may differ, does not constitute negligence simply because in a particular case the result was disastrous. To hold the state liable under the circumstances presented here would mean that either the state must render no public service at all, or be an insurer against any bad results that might follow . . ."

The court further pointed out that there is no authority that a physician, whether employed by the state, or in a private practice, must use what some physicians consider the best method if a method which is accepted by respectable medical authority is adopted.

Implied Warranty of a New Medicinal Agent

POLIOMYELITIS was contracted by two children, Anne Gottsdanker and James Phipps, shortly after they had been inoculated with Salk vaccine manufactured by Cutter Laboratories. The vaccine administered to each child was purchased by their physician from a pharmacy in a sealed container.

An action for damages was brought in behalf of each child against Cutter Laboratories, the plaintiffs contending that Cutter's vaccine caused the illness it was designed to prevent. The physicians who injected the vaccine were not sued.

Jury verdicts were returned in favor of the two children for a total of almost $150,000. (Gottsdanker, et al. v. Cutter Laboratories, 182 A.C.A. 696.)

There was substantial evidence that the vaccine contained live virus of poliomyelitis and that it actually and directly caused the plaintiffs to contract poliomyelitis.

The case presented to the jury was based on three theories of "causes of action." One was an allegation of negligence in manufacture, the second was breach of an implied warranty of merchantability and the last was breach of implied warranty of fitness for the intended purposes.

When the jury returned its verdict, it reported first that Cutter Laboratories was not negligent. But it found for the plaintiffs on the grounds there was a breach of warranty since the vaccine caused them to have poliomyelitis.

The case was appealed primarily to present the question whether the law relating to implied warranties of merchantability and of fitness apply under the facts of this case.

The appellate court, noting that in California both the seller and the manufacturer imply warranty of the suitability of human food products to the ultimate consumer, decided that the "vaccine is intended for human consumption quite as much as is food." Even though warranties ordinarily run with a contract of sale from the manufacturer to the purchaser or consumer, the court held that in cases of food and drugs the warranties are for the benefit of the person whom the manufacturer intended to be and who in fact became the consumer.

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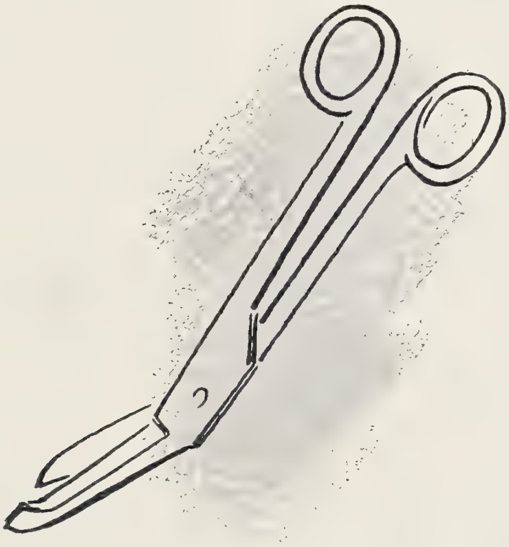
*200 NYS (2d) 691.

It was contended by the appellants that public policy would best be served by denying recovery in warranty with regard to new drugs, for the action of such drugs could not always be certainly known. The court said that this argument might have merit if the question were only as to whether a new medicine would cure or a new vaccine prevent, but that this argument could not relieve the manufacturer or seller of implied warranty that the product is fit or safe for human consumption.

It is suggested that basically the Cutter decision is one more step in the social trend that has been developed and evolved in judicial opinions during the past two decades to impose liability on someone, regardless of fault, wherever an individual suffers severe personal injury. This concept is motivated by many factors and shared or accepted by a large proportion of people besides many lawyers and judges.

With the large number of biologics, chemicals, pesticides, additives and other new substances being offered on the market each year, it is apparent that private and governmental testing and protective screens cannot always insure complete protection. The public and physicians will rely also upon the experience, reputation and stability of the manufacturer of products used and consumed.

Howard Hassard



NEWS & NOTES

NATIONAL · STATE · COUNTY

ALAMEDA

Dr. David J. Dugan was installed as president of the Alameda-Contra Costa Medical Association at the annual meeting in November. Dr. Dan Tucker was elected vice-president, and Dr. Harold Kay, secretary-treasurer.

Elected as delegates to California Medical Association House of Delegates were: Drs. Paul Cronenwett, Charles Dimmler, John Morrison, Bernard Gadwood, Charles D. Anderson, Robert Leet, Samuel Etheredge, Byron Royce, Ralph Kirk, Harold Harvey, Donald Dodds, H. Harvey Peterson and J. Brandon Bassett.

KERN

Dr. Harold C. Freedman, Shafter, was elected president-elect of the Kern County Medical Society to succeed Dr. Carrol W. Goss, Lamont, who will be installed as president of the society on January 17. Dr. Thomas V. Reese was elected vice-president, and Dr. Hans E. Einstein secretary-treasurer.

Delegates elected by the Kern County society to the House of Delegates of the California Medical Association were the following physicians: John E. Vaughan, R. A. Patrick and Robert L. Day.

LOS ANGELES

The National Institutes of Health have announced an additional $168,712 was awarded to the **College of Medical Evangelists** during the fiscal year 1960 as training grants, research fellowships and traineeships, bringing the total to $659,374.

The additional grants were made up of two on the Loma Linda campus totaling $31,752 and of seven grants on the Los Angeles campus for $136,960.

* * *

The Research Study Club of Los Angeles will hold its Thirtieth Annual Mid-Winter Clinical Convention in Ophthalmology and Otolaryngology at the Statler-Hilton Hotel from January 23 to 27, 1961.

SANTA BARBARA

Dr. Albert J. Scherman was reelected chairman of the Santa Barbara County chapter of the California Academy of General Practice at a meeting last month. Dr. Robert McGinnis was elected vice-chairman, and Dr. John Rutten as secretary-treasurer.

SANTA CLARA

Announcement that two new assistant professors of neurology have joined the faculty of **Stanford Medical School** effective December 1 has been made by Dean Robert H. Alway. They are Dr. Gilbert S. Frank, in practice in San Francisco, and Dr. Anthony M. Iannone, until recently at the University of Minnesota.

At the same time it was announced that Dr. John E. Connolly, instructor in surgery, has been promoted to assistant professor of surgery.

GENERAL

Orders for more than 5,000 copies of the new edition of the California Medical Association's **Relative Value Study** have been received at the association's headquarters since announcement of the 1960 revision and distribution of it to the 17,000 C.M.A. members.

The orders for the new edition of the Study, which was developed for use as a guide to the relative amount of time and skill required of physicians for the various medical and surgical procedures, have come from state and county medical associations in this country and abroad, from insurance companies, hospital administrators, welfare agencies, and from individual physicians and groups outside the state who provide medical care or have an actuarial interest in the relative value of items of care. For such orders a charge is made to cover printing and handling costs.

In its press release announcing the distribution of the latest Study, Dr. Samuel Sherman, chairman of the Council, said that the new edition "more adequately reflects changes in the practice of medicine and the development of new procedures and phases of medical practice."

The Study suggests numerical ratios based on a unit of one for a minimal service—such as a complete blood count, a follow-up office visit or removing a foreign body from the surface of an eye. As procedures become more complex they increase proportionately in numerical value. As an example, removing an appendix is considered 40 times more complex a procedure than removing something on the surface of the eye.

No arbitrary dollar value is placed on the basic unit, such being left to the individual physician should he apply it to his own practice or to agreement with administrators of health plans and health insurance groups, according to Dr. Sherman.

"This dollar value varies throughout the state, depending on such factors as the type of service provided, the type of practice, and the economic standards of the community," he said.

"It must be emphasized, however, that this is *not* a fee schedule, nor is it binding on any physician or organization," he continued.

"We hope, nevertheless, that this revised Study will replace the previous edition for the guidance of insurance companies in setting their indemnities, that insured groups will use it to measure the adequacy of the coverage for which they pay their premiums and that it will help to protect the insured patient."

In general, higher numerical values are represented in the new Study, much of this due to increased services relative

CALIFORNIA MEDICAL ASSOCIATION

90th Annual Session

Los Angeles April 30 to May 3

For general announcement and hotel reservation application form, see pages 372 and 373 to surgical procedures (which comprise nearly 80 per cent of the total), according to Dr. Sherman.

Previously, the relative value studies considered only two weeks of postoperative care. In actual practice, aftercare ranges from none to that covering a period of several months.

"The present proposals now account for specific postoperative periods for each surgical procedure, determined by an extensive survey of surgical practices throughout California," Dr. Sherman said. "This provides for an all-inclusive arrangement that in some instances means additional service, in some it means less and in others it means no change."

The result is a net increase in the numerical values of surgical procedures, it was explained. Medical services, on the other hand, underwent little change except for purposes of clarification and for recognition of the important role played by those specializing in internal medicine, according to Dr. Sherman.

POSTGRADUATE EDUCATION NOTICES

THIS BULLETIN of the dates of postgraduate education programs and the meetings of various medical organizations in California is supplied by the Committee on Postgraduate Activities of the California Medical Association. In order that they may be listed here, please send communications relating to your future medical or surgical programs to Postgraduate Activities, California Medical Association, 2975 Wilshire Boulevard, Los Angeles 5.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Clinical Traineeships — Anesthesia, Dermatology and Pediatric Cardiology. Dates by arrangement. Minimum period—two weeks. Fee: Two weeks, $150.00; four weeks, $250.00.

Mexico—Clinical Postgraduate Program (sessions to be held in Mexico City, Guadalajara and Acapulco). January 7 through 22. Twenty-four hours. Fee: $125.00.

Bedside Clinics (Harbor Hospital, Torrance). Thursdays, January 12 through March 30. Twenty-four hours. Fee: $50.00.

An Evaluation of Librium. Saturday, January 14. Eight hours. No fee.

Below-Knee Prosthetics. Monday through Friday, January 23 through 27. Enrollment limited to 20. Fee: $125.00.

Fractures (Lecture and Dissection). Friday through Sunday, February 24 through 26. Eighteen hours.*

Retinal Surgery. Thursday and Friday, March 2 and 3. Twelve hours.*

Management of Pain by Therapeutic Nerve Blocks—Harbor Hospital. Friday through Sunday, March 7 through 9. Eighteen hours. Fee: $50.00.

Psychiatry in Medicine. Friday and Saturday, March 10 and 11. Twelve hours. Fee: $15.00 (includes one lunch and one dinner).

Israel—Clinical Postgraduate Program (sessions to be held in Jerusalem and Tel Aviv). April 20 through 28. Thirty-two hours. Fee: $200.00.

Management of Trauma—Harbor Hospital. Friday and Saturday, May 19 and 20. Nine hours.*

Gerontology. Friday and Saturday, May 19 and 20. Twelve hours.*

Common Emergencies in Clinical Practice. Friday and Saturday, May 26 and 27. Twelve hours. Fee: $40.00.

Dermatology in Clinical Practice. Monday and Tuesday, July 10 and 11. Twelve hours.*

Advanced Seminars in Dermatology (for Dermatologists). Wednesday through Sunday, July 12 through 16. University Conference Center, Lake Arrowhead. Fourteen and one-half hours. Fee: $150.00 (includes room and meals).

Infertility. Friday and Saturday, July 14 and 15.†

Advanced Seminar on Infertility. Sunday through Wednesday, July 16 through 19. University Conference Center, Lake Arrowhead.†

General Pediatrics. Wednesday through Sunday, August 2 through 6. University Conference Center, Lake Arrowhead. Sixteen hours. Fee: $150.00 (includes room and meals).

Endocrinology. Friday and Saturday, August 4 and 5.†

For information on courses for physicians or ancillary personnel *contact:* Thomas H. Sternberg, M.D., assistant dean for Continuing Medical Education, U.C.L.A. Medical Center, Los Angeles 24. BRadshaw 2-8911, Ext. 7114.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Vectorcardiography. Saturday, December 17. Seven hours. Fee: $20.00.

Symposium on Eye Problems in Children, Children's Hospital. Saturday, January 14. Seven hours. Fee: $12.50.

Man and Civilization: The Control of the Mind. Saturday through Monday, January 28 through January 30. Twenty-one hours. Fee: $25.00.

Evening Lecture Series at Richmond Hospital. Thursday evenings, February 9 through March 16.†

Pain. Saturday and Sunday, February 11 and 12. Fourteen hours. Fee: $30.00.

Medicine for General Practitioners. Mount Zion Hospital. Monday through Friday, February 20 through 24. Thirty-five hours.*

Pediatric Neurology. Thursday through Saturday, March 2 through 4. Twenty-one hours.*

Urology. Thursday through Saturday, March 9 through 11. Twenty-one hours.*

Perinatal Problems, Children's Hospital. Saturday, March 11. Seven hours. Fee: $12.50.

Diagnostic Radiology. Wednesday through Sunday, March 15 through 19. Thirty-five hours.*

Evening Lecture Series in Medicine, Eden Hospital. Tuesday evenings, April 4 through May 23.†

Laboratory Investigation of Endocrine Disorders. Friday through Sunday, April 7 through 9. Twenty-one hours.*

General Surgery. Thursday through Saturday, April 13 through 15. Twenty-one hours.*

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*Fee to be announced.
†Hours and fees to be announced.

Ear-Nose-Throat. Thursday through Saturday, May 11 through 13. Twenty-one hours.*

Proctology. Thursday through Saturday. May 18 through 20. Twenty-one hours.*

Fundamental Practices of Radioactivity and the Diagnostic and Therapeutic Uses of Radioisotopes. Two or three month course limited to one enrollee per month. Fee: $350.00.

For information on courses for physicians or ancillary personnel *contact:* Seymour M. Farber, M.D., assistant dean, Department of Continuing Medical Education, University of California Medical Center, San Francisco 22. MOntrose 4-3600, Ext. 665.

PRESBYTERIAN MEDICAL CENTER, SAN FRANCISCO

Hematology and Cancer Chemotherapy. Saturday, January 7. Eight hours. Fee: $25.00.

Common Problems in Pediatrics. Sunday, January 29. Eight hours. Fee: $25.00.

Dermatologic Therapy. Saturday, February 11. Eight hours. Fee: $25.00.

Diabetes and Thyroid Disease: Current Methods in Diagnosis and Treatment. Saturday, February 25. Eight hours. Fee: $25.00.

The Four R's of Fractures: Recognition, Reduction, Retention, Rehabilitation. Saturday, March 11. Eight hours. Fee: $25.00.

Problems in Therapy of Cardiac Disease. Sunday, April 9. Eight hours. Fee: $25.00.

Problems in Neurology and Neurosurgery. Saturday, May 6. Eight hours. Fee: $25.00.

Psychological Problems in General Practice. Sunday, May 21. Eight hours. Fee: $25.00.

Horizons in Surgery. Saturday, June 17. Eight hours. Fee: $25.00.

Note:

Each one of 10 conferences listed above	$ 25.00
The complete series of 10 conferences	150.00
A series of any 5 conferences	100.00

Operable Heart Disease. Friday and Saturday, March 3 and 4.

Conference on Keratoplasty. Wednesday through Friday, March 8 through 10.

General Review Course for Practicing Physicians. Thursday through Saturday. March 16 through 18.

Conference on Strabismus. Wednesday through Friday. July 12 through 14.

Contact: Arthur Selzer, M.D., program committee chairman, Presbyterian Medical Center, Clay and Webster Sts., San Francisco 15.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Recent Advances on Hypertension. Saturday, January 14, 8:00 a.m.-6:00 p.m.

Contact: Lowell A. Rantz, M.D., Associate Dean and Director Postgraduate Medicine, Stanford University School of Medicine, 300 Pasteur Drive, Palo Alto, DAvenport 1-1200.

UNIVERSITY OF SOUTHERN CALIFORNIA, LOS ANGELES

Nuclear Medicine:

Part I, January. Fee: $50.00.
Part II, eight weeks. Fee: $350.00.
Part III, twelve weeks. Fee: $350.00.

Clinical Hematology. Saturday and Sunday, February 25 and 26.*

Hawaii Course. August 2 through 18. The USC School of Medicine will offer the 4th Postgraduate Refresher Course to be held in Honolulu and on board the S.S. Matsonia. (As a time and money saver, air travel is also possible.)

Cardiac Resuscitation. Each Wednesday by appointment, 4 to 6 p.m. USC Medical Research Building, Room 211, 2025 Zonal Avenue. Tuition: $30.00. (Each session all-inclusive.)

Basic Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Physicians may register at any time and receive all 52 issues. Fifty-two weeks. Fee: $100.00.

Advance Home Course in Electrocardiography. One year postgraduate series, electrocardiogram interpretation by mail. Fifty-two issues: $85.00. Physicians may register at any time.

Contact: Phil R. Manning, M.D., associate dean and director, Postgraduate Division, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles 33. CApital 5-1511.

COLLEGE OF MEDICAL EVANGELISTS

SURGICAL ANATOMY (Dissection, Lectures and Demonstrations):

Thorax, Abdomen, Pelvis. Monday and Wednesday, January 4 through April 12. 121 hours. Fee: $125.00.

Head and Neck. Monday and Wednesday, April 19 through May 31. Sixty-three hours. Fee: $75.00.

SURGICAL ANATOMY (Lectures and Demonstrations only):

Thorax, Abdomen, Pelvis. Wednesdays, January 4 through April 12. Twenty-eight hours. Fee: $50.00.

Head and Neck. Wednesdays, April 12 through May 31. Twenty-four hours. Fee: $35.00.

Alumni Postgraduate Convention Refresher Courses, March 12 and 13, on the campus of the College of Medical Evangelists at White Memorial Hospital.

Joint Manipulation. Monday through Friday, March 20 through 24. Twenty hours. Fee: $100.00.

Tropical Public Health. Monday through Friday, April 3 through 28. Fee: $65.00.

Clinical Traineeships available in clinical departments by arrangement with Postgraduate Division and Postgraduate Chairman of department involved. In addition to those listed other traineeships in other departments can be arranged. Eighty hours minimum. Limited enrollment. Begin when individually arranged.

1. **Anesthesia.** Six months. 250 to 300 hours. Fee: $350.00.
2. **Internal Medicine.** Two weeks to nine months.
3. **Pulmonary Diseases** (can be arranged).
4. **Traumatology.** One month. 160 hours. Fee: $125.00.
5. **Urology** (can be arranged).

For information contact: Division of Postgraduate Medicine, College of Medical Evangelists, 1720 Brooklyn Ave., Los Angeles 33. ANgelus 9-7241, Ext. 214.

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* Fee to be announced.

CALIFORNIA MEDICAL ASSOCIATION POSTGRADUATE INSTITUTES—1961

Southern Counties, February 2 and 3, El Mirador Hotel, Palm Springs, in cooperation with University of Southern California School of Medicine. *Chairman:* Raymond Tatro, M.D., 1875 North "D" Street, San Bernardino.

West Coast Counties, March 2 and 3, Del Monte Lodge, Pebble Beach, in cooperation with College of Medical Evangelists. *Chairman:* A. F. Kandlbinder, M.D., 835 Cass Street, Monterey.

North Coast Counties, March 23 and 24, Flamingo Hotel, Santa Rosa, in cooperation with University of California, San Francisco. *Chairman:* Milton A. Antipa, M.D., 50 Montgomery Drive, Santa Rosa.

San Joaquin Valley, April 14 and 15, Ahwahnee Hotel, Yosemite, in cooperation with UCLA School of Medicine. *Chairman:* J. Malcolm Masten, M.D., 1051 R Street, Fresno.

Sacramento Valley Counties, June 29 and 30, in cooperation with Stanford University School of Medicine, Tahoe Tavern, Lake Tahoe. *Chairman:* Joel T. Janvier, M.D., 3632 Marysville Road, Del Paso Heights.

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AUDIO-DIGEST FOUNDATION

A nonprofit subsidiary of the C.M.A., offers (on a subscription basis) a series of six different hour-long tape recordings covering general practice, surgery, internal medicine, obstetrics and gynecology, pediatrics and anesthesiology. Designed to keep physicians posted on what is new and important in their respective fields, these programs survey current national and international literature of interest and contain selected highlights of on-the-spot recordings of national scientific meetings, panel discussions, symposia, and individual lectures. For information contact Mr. Claron L. Oakley, Editor, 1919 Wilshire Blvd., Los Angeles 57, HUbbard 3-3451.

Medical Dates Bulletin

JANUARY MEETINGS

Los Angeles County Heart Association Mid-Winter Symposium. January 11. Statler Hilton Hotel, Los Angeles. *Contact:* H. T. Siegel, LACHA, 2405 W. 8th Street, Los Angeles.

Long Beach Heart, Cancer and TB Third Annual Medical Symposium on Diseases of the Heart, Lungs and Chest. January 18, 12:30 p.m., Long Beach Petroleum Club. *Contact:* Leslie R. Raymond, executive director, 2034 Pacific Avenue, Long Beach.

Los Angeles Trudeau Society and The Tuberculosis and Health Association of Los Angeles County 8th Biennial Chest Disease Symposium. January 18 through 20. Ambassador Hotel, Los Angeles. *Contact:* Richard S. Gaines, 1670 Beverly Blvd., Los Angeles 26, California.

Western Pharmacology Society Annual Meeting. January 22 through 24. Miramar Hotel, Santa Monica. *Contact:* Howard R. Bierman, M.D., President, 9730 Wilshire Blvd., Beverly Hills.

Thirtieth Annual Mid-Winter Convention in Ophthalmology and Otolaryngology. January 23 to 27. Statler-Hilton Hotel, Los Angeles. *Contact:* Norman Jesberg, M.D., treasurer, 500 South Lucas, Los Angeles 17.

Western Society for Clinical Research. January 26 through 28. Carmel-by-the-Sea, Calif. *Contact:* William N. Valentine, M.D., secretary-treasurer, UCLA School of Medicine, Los Angeles 24.

Fresno County Heart Association Ninth Annual Central California Cardiovascular Symposium. January 27. 8:30 a.m. to 5:30 p.m. Fresno Elks Club, 5080 E. Kings Canyon Road, Fresno. *Contact:* Jack J. Jacobson, M.D., chairman, Professional Services Committee, 1584 N. Van Ness Ave., Fresno.

FEBRUARY MEETINGS

American College of Physicians Southern California Region, Annual Meeting, in cooperation with Northern California and Nevada, Arizona and New Mexico. Biltmore Hotel, Santa Barbara, February 3, 4, 5, 1961. *Contact:* Sherman Mellinkoff, M.D., chairman, scientific program committee, U.C.L.A. Medical Center, Los Angeles 24.

Institute for Metabolic Research "Lipid Metabolism in Diabetes and Related Conditions" two-day round table symposium. February 7 and 8. Highland-Alameda County Hospital, Oakland. *Contact:* L. W. Kinsell, M.D., director, Institute for Metabolic Research, 2701 14th Ave., Oakland.

Obstetrical and Gynecological Assembly of Southern California, 16th Annual Mid-Winter Clinical Assembly. Ambassador Hotel, Los Angeles, February 13 through 17. *Contact:* Dee Davis, executive secretary, 5478 Wilshire Blvd., Los Angeles 36, WEbster 4-1551.

Los Angeles Society of Neurology and Psychiatry in cooperation with California Spinal Cord Research Foundation, Conference "Recent Contributions of Basic Research to Paraplegia." February 17 and 18. Los Angeles. *Contact:* Robert P. Sedgwick, M.D., secretary-treasurer, 2010 Wilshire Blvd., Los Angeles 57.

California Tuberculosis and Health Association, California Trudeau Society Annual Joint Meeting. February 19 through 22, Jack Tar Hotel, San Francisco. *Contact:* Executive director, C.T.H.A., 130 Hayes Street, San Francisco.

Southern California Society of Gastroenterology. "Problems and Pitfalls in Differential Diagnosis of Jaundice"—Leon Schiff, M.D., February 27, Los Angeles County Medical Association. *Contact:* William E. Molle, M.D., secretary-treasurer, 6221 Wilshire Blvd., Los Angeles 48.

MARCH MEETINGS

Second Low-Beer Memorial Lecture. University of California School of Medicine. March 2, 8:00 p.m. Auditorium-S, Medical Sciences Bldg., U. C. San Francisco. *Contact:* F. Buschke, M.D., Professor of Radiology, University of California Medical Center, San Francisco 22, Calif.

Southwestern Pediatric Society Postgraduate Lecture Series. March 7 and 8, Statler Hotel, Los Angeles. *Contact:* Harry O. Ryan, M.D., secretary, 194 N. El Molino, Pasadena.

Anesthesia Section of Los Angeles County Medical Association 6th Annual Spring Postgraduate Meeting. March 11 and 12. Statler Hilton Hotel, Los Angeles. *Contact:* Thomas W. McIntosh, M.D., 686 East Union Street, Pasadena.

College of Medical Evangelists Annual Alumni Postgraduate Convention. Scientific Assembly, Ambassador Hotel, March 14, 15 and 16. *Contact:* F. Harriman Jones, M.D., general chairman, College of Medical Evangelists, 316 North Bailey Street, Los Angeles 33.

SPRING AND SUMMER MEETINGS

INDUSTRIAL MEDICAL ASSOCIATION. Biltmore Hotel, Los Angeles, April 11 through 13. *Contact:* Leonard Arling, M.D., secretary, The Northwest Industrial Clinic, 3101 University Avenue, S.E., Minneapolis 14.

CALIFORNIA MEDICAL ASSOCIATION Annual Meeting, Ambassador Hotel, Los Angeles. April 30 through May 3. *Contact:* John Hunton, executive secretary, 693 Sutter Street, San Francisco 2; or Ed Clancy, director of public relations, 2975 Wilshire Blvd., Los Angeles 5.

PACIFIC COAST OTO-OPHTHALMOLOGICAL SOCIETY ANNUAL MEETING. April 30-May 4. Riviera Hotel, Palm Springs. *Contact:* Al Miller, M.D., Secretary, 500 South Lucas Ave., Los Angeles 17.

HAWAII MEDICAL ASSOCIATION ANNUAL MEETING. May 4-7. Honolulu, Hawaii. *Contact:* Lee McCaslin, Executive Secretary, 510 So. Beretania, Honolulu 13.

AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS (for members and invited guests). May 10-12. Del Monte Lodge, Pebble Beach. *Contact:* William J. Engel, M.D., Secretary-Treasurer, Cleveland Clinic, 2020 E. 93rd St., Cleveland 6, Ohio.

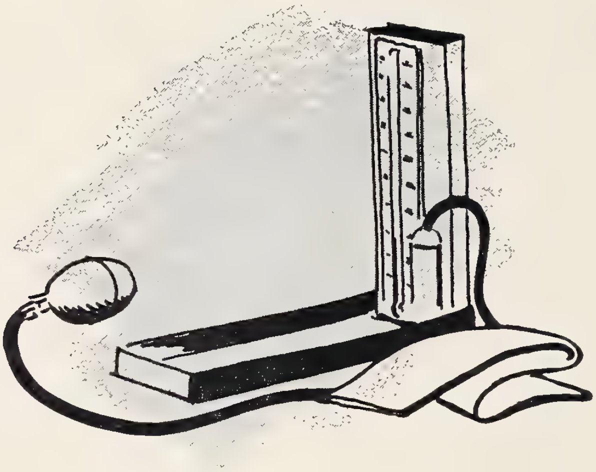
MEDICAL STAFF OF CHILDREN'S HOSPITAL OF THE EAST BAY Ninth Annual Clifford Sweet Seminar. May 18, 19 and 20. Hotel Claremont, Berkeley, and Children's Hospital of the East Bay. *Contact:* Seymour J. Harris, M.D., chairman, Lectureship Committee, 401 29th Street, Oakland 9.

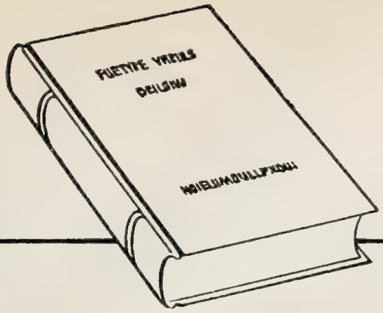
AMERICAN ORTHOPAEDIC ASSOCIATION (members and guests). May 22-25. The Ahwahnee Hotel, Yosemite. *Contact:* Lee Ramsay Straub, M.D., Secretary, 535 E. 70th St., New York 21.

AMERICAN UROLOGICAL ASSOCIATION, INC. May 22-25. Biltmore Hotel, Los Angeles. *Contact:* Mr. William P. Didusch, Executive Secretary, 1120 N. Charles St., Baltimore 1.

MEMORIAL HOSPITAL OF LONG BEACH, Third Annual Medical Staff Symposium. May 24. New Memorial Hospital, 2801 Atlantic Ave., Long Beach 6. *Contact:* George X. Trimble, M.D., secretary, Memorial Hospital of Long Beach.

WESTERN BRANCH, AMERICAN PUBLIC HEALTH ASSOCIATION Annual Meeting (joint with U. S.-Mexico Border Public Health Association). June 26 through 29. El Cortez Hotel, San Diego. *Contact:* Robert E. Mytinger, M.P.H., director, Executive Office Western Branch, APHA, 693 Sutter Street, San Francisco 2.





THE PHYSICIAN'S *Bookshelf*

VISUAL AIDS IN CARDIOLOGIC DIAGNOSIS AND TREATMENT—Edited by Arthur M. Master, M.D., and Ephraim Donoso, M.D. Sponsored by the American College of Chest Physicians. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 216 pages, $10.00.

This monograph is an elaboration of the proceedings of the American College of Chest Physicians held on June 6, 1959, presented by a group of investigators from the Mt. Sinai Hospital in New York. The title of the text is somewhat misleading since the material covered is far more comprehensive than merely visual aids. The purpose of the monograph was to present the important principles and use of the newer graphic methods and techniques now available to diagnose, evaluate and treat a patient with heart disease. The rapid progress made in cardiovascular diseases and the new instruments and tools available for studying patients with heart disease make it necessary to periodically review and evaluate the newer techniques. Sixteen chapters by 23 authors cover a wide variety of subjects. These include phonocardiography, dye dilution studies, right and left heart catheterizations, vector cardiography, angiocardiography, selective angiocardiography, as well as chapters on surgical monitoring, anesthesia, the problems of pump oxygenators and postoperative treatment following cardiac surgery. The initial chapter broadly covers "the machine and physician of present day cardiology" and is a good introduction to that which follows. A well-illustrated chapter on the pathologic anatomy of surgically correctible congenital cardiac malformations is most helpful.

The chapters are written by experienced men in their fields, the text is well-illustrated and the material is up to date with a good bibliography at the end of each chapter. Although the coverage is not complete, for which no claim is made by the authors, this symposium is a most useful addition to the cardiac literature and will be of great interest to all physicians interested in being brought up to date on a most important area of medicine. The Mt. Sinai Hospital and the American College of Chest Physicians have collaborated to produce a very worthwhile book.

* * *

NEOPLASMS OF BONE AND RELATED CONDITIONS —Etiology, Pathogenesis, Diagnosis and Treatment—Second Edition—Bradley L. Coley, M.D., Attending Surgeon (Emeritus), Bone Tumor Department, Memorial Hospital for Cancer and Allied Diseases, New York; Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. 863 pages, with 649 illustrations and 31 tables, $30.00.

Not just a book, this a library crammed with information. Few details, however remotely connected with bone tumors, are left untouched—neoplasms in dinosaurs, amputation techniques, jurisprudence of osseous oncology, x-ray dosage, even rare conditions simulating bone tumors. Illustrations of histological pathology, though stingy in number, are unequivocal in the story they tell.

Such a joy to read. Clear, legible print. Illustrations that really illustrate, and—O, marvel of publishers' art—located on the same page as their discussion. No fine print to try the myopic patience. Bulging bibliographies—also in nonspastic print—document the writer's opinions.

Once started, the reader is reluctant to set down this easily read tome. Although an extra comma here and there would help interpretation of some of the subordinate claused periodic sentences, still in general, the stately style and lucid logic flow smoothly.

The chapter on blood chemistry does not waste a word, and so constitutes a review well worth memorizing. The publisher will not enjoy being reminded that an upside down illustration in a book of this caliber is like hanging the Mona Lisa inverted in the Louvre.

A ray of optimism and hope is injected in this otherwise gloomy subject by the presentation of one or two successful and hence unusual cases at the end of each chapter.

ROBERT P. WATKINS, M.D.

* * *

P-Q-R-S-T—A Guide to Electrocardiogram Interpretation—Fourth Edition—Joseph E. F. Riseman, M.D., Assistant Clinical Professor of Medicine, Harvard Medical School. The Macmillan Company, 60 Fifth Avenue, New York 11, N. Y., 1960. 168 pages, $6.50.

This is the fourth edition of Riseman's guide which was first published in 1944. There is no preface that indicates the reason for the fourth edition and in reviewing the text, one does not find obvious new things that may explain the new edition. For example, there is no account of the newer concepts of left ventricular conduction defects other than left bundle branch block and there is no discussion of the current concepts regarding axis deviation. In fact this is expressly denied when on page 108 it is stated that axis deviation by itself is of no clinical significance. This statement does not take into account the recent work of Grant and others who have shown that left axis deviation exceeding —30° is due to a left ventricular conduction defect or anterolateral myocardial disease. The book is planned for the beginner as a practical guide and in the author's words is not intended to replace the standard textbooks of electrocardiography. The newer texts cover much of the material in this guide and therefore the need which was well filled by this guide in 1944 is less obvious now. The line drawings and the step by step explanations of interpretation are most helpful although some improvement in rendition of the contour of the S-T segment would be desirable. The atlas of electrocardiograms in the rear of the book and their complete interpretation and clinical correlation are sound and valuable.

In general this guide can be recommended as a reliable introduction to the subject for the beginner but will not be sufficient for the individual who wishes to extend his knowledge.

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KEY TO ABBREVIATIONS USED

(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor; (PE)—Page End; (MJ)—Medical Jurisprudence.

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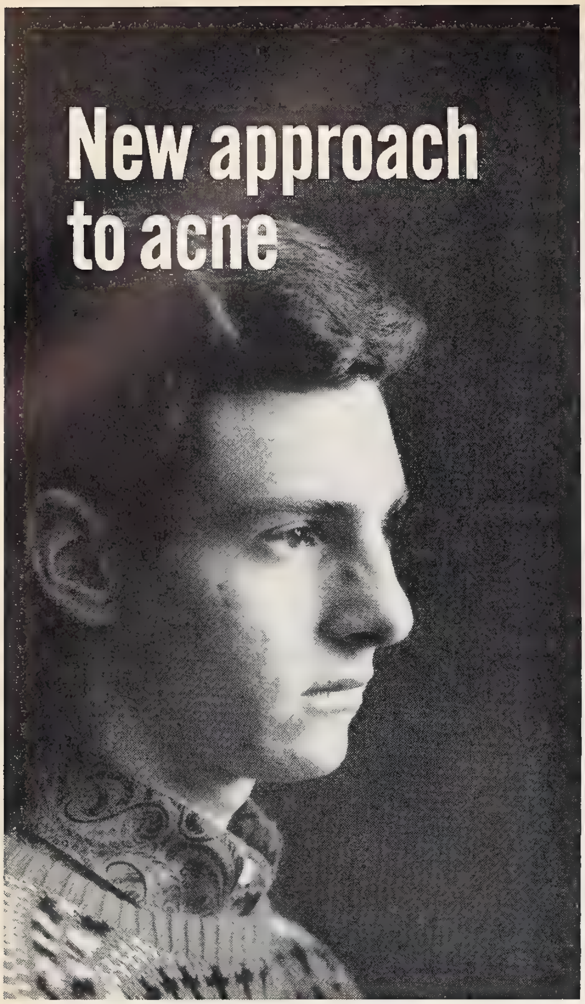

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Use of Female Hormone Feasible for Men

The long-term therapeutic use of female hormones in men has been found to be "entirely feasible," a report in the Sept. 17 *Journal of the American Medical Association* said.

The effects of female hormones (estrogens) prescribed for men recovering from heart attacks were reported by Drs. Jessie Marmorston, Oscar Magdison, Oliver Kuzma and Frederick J. Moore, Los Angeles.

All of the patients had suffered heart attacks (myocardial infarctions) as a result of hardening of the coronary arteries that surround the heart. A high content of fats in the blood is believed to be involved in the development of hardening of the arteries. Estrogens were administered to the patients to reduce their elevated blood fat levels.

The authors said the ability of estrogens to reduce fats in the blood is "well established" but their use has been limited in men because they can cause feminization.

However, they said, "our findings indicate clearly that the long-term investigative administration of small to moderate doses of estrogen to men with myocardial infarction is entirely feasible."

The findings were based on a study of 109 men, ranging from 35 to 83 years of age, who were treated with estrogens for a total of more than 900 months.

Each patient was started on a small dose which was increased little by little over a considerable period of time.

"With this gradual approach to tolerance, clinical side-effects have been observed in most patients at some time in the course of therapy but have presented no obstacle to continuation of therapy," the physicians said.

The first manifestation in almost every case was pain or tenderness of the breast, they said. Of 44 patients available for observation for some months after this symptom appeared, they said, 15 tolerated the same dosage thereafter and 17 tolerated an even greater dosage whereas in only 12 was it necessary to reduce the dosage.

Platinum Blonde Bleaching Makes Hair Dangerously Brittle

The extreme degree to which hydrogen peroxide bleaching must be carried out to render the hair platinum blonde "usually make the hair dangerously brittle," says the *Journal of the American Medical Association.*

The effects of hydrogen peroxide were discussed by Veronica L. Conley, Ph.D., director of the A.M.A. department of nursing, in answer to a question submitted to the *Journal.*

"Adverse reactions to bleaching of the hair are

(Continued on Page 68)

BOOKS RECEIVED

Books received by CALIFORNIA MEDICINE *are acknowledged in this column. Selections will be made for more extensive review in the interests of readers as space permits.*

ARTEFACTS AND HANDLING AND PROCESSING FAULTS ON X-RAY FILMS—Prof. Dr. E. A. Zimmer, Berne, Switzerland. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 67 pages, 128 figures, $5.75.

ATLAS OF CLINICAL HEMATOLOGY—Katsuji Kato, Ph.D., M.D., Professor of Physiology (Hematology), Tokyo Medical College. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 296 pages, $25.00.

CAMPS FOR DELINQUENT BOYS—A guide to Planning—George H. Weber, Consultant on Diagnostic and Clinical Treatment Services in Institutions, Technical Aid Branch, Division of Juvenile Delinquency Service. U. S. Department of Health, Education, and Welfare, Social Security Administration, Children's Bureau, 1960. Children's Bureau Publication No. 385-1960. Single copies of "Camps for Delinquent Boys" are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., 25 cents each.

CAREERS IN PEDIATRICS—Report of the Thirty-sixth Ross Conference on Pediatric Research. Published by Ross Laboratories, Columbus 16, Ohio.

CARE OF THE WELL BABY—Medical Management of the Child from Birth to 2 Years of Age—Kenneth S. Shepard, M.D., Director of Well Baby Clinics, Northwestern University School of Medicine; Staff Examiner, Infant Welfare Society, Evanston; Pediatrician, Evanston Hospital Association and St. Francis Hospital, Evanston; American Board of Pediatrics. J. B. Lippincott Company, East Washington Square, Philadelphia 5, Pa., 1960. 224 pages, $3.25.

CIBA FOUNDATION COLLOQUIA ON ENDOCRINOLOGY—Volume 13, Human Pituitary Hormones, in honour of Professor B. A. Houssay, For. Mem. R.S. G.E.W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc., editors for the Ciba Foundation. Little, Brown & Company, 34 Beacon Street, Boston, Mass., 1960. 336 pages, 86 illustrations. $9.50.

CLINICAL OBSTETRICS AND GYNECOLOGY—September 1960—Volume 3, No. 3—Bleeding and Hemorrhage in Late Pregnancy, R. Gordon Douglas, M.D., Editor; Frigidity, Edward C. Mann, M.D.; The Obstetric Forceps, Puerperal Fever, and Gynecology Becomes a Surgical Specialty, Harold Speert, M.D. A Quarterly Book Series, published by Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East 33rd Street, New York 16, N. Y., 1960. $18.00 a year for four consecutive numbers issued quarterly (by subscription only).

COMPLICATIONS IN SURGERY AND THEIR MANAGEMENT—Edited by Curtis P. Artz, M.D., F.A.C.S., Associate Professor of Surgery of the University of Mississippi, and James D. Hardy, M.D., F.A.C.S., Professor and Chairman of the Department of Surgery of the University of Mississippi. With Contributions by Sixty-Nine Authorities. W. B. Saunders Company, Philadelphia, 1960. 1075 pages, $23.00.

CONGENITAL MALFORMATIONS — Ciba Foundation Symposium—G. E. W. Wolstenholme, O.B.E., M.A., M.B., M.R.C.P., and Cecilia M. O'Connor, B.Sc., editors for the Ciba Foundation. Little, Brown & Company, 34 Beacon Street, Boston, Mass., 1960. 308 pages, 91 illustrations, $9.00.

DIVERTICULITIS—Sara M. Jordan, M.D., Founder and Former Head of the Department of Gastroenterology. The Lahey Clinic; member of the Staff, New England Baptist Hospital, and New England Deaconess Hospital, Boston, Massachusetts; and Russell S. Boles, Jr., M.D., member of the staff, Department of Gastroenterology, The Lahey Clinic; New England Baptist Hospital, and New England Deaconess Hospital, Boston, Massachusetts. Modern Medical Monographs 21—Irving S. Wright, M.D., Editor in Chief, and Richard H. Orr, M.D., Consulting Editor. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N.Y., 1960. 90 pages, $4.75.

FUNDAMENTALS OF CHEST ROENTGENOLOGY—Benjamin Felson, M.D., Professor and Director, Department of Radiology, University of Cincinnati College of Medicine; Director, Departments of Radiology, Cincinnati General, Children's, Daniel Drake, Dunham, Christian R. Holmes, and Longview Hospitals; and Special Consultant, United States Public Health Service. W. B. Saunders Company, Philadelphia, 1960. 301 pages, with 450 illustrations on 238 figures, $10.00.

THE MANAGEMENT OF FRACTURES AND SOFT TISSUE INJURIES—by the Committee on Trauma, American College of Surgeons. Based on An Outline Of The Treatment of Fractures, Seventh Edition, and Early Care of Acute Soft Tissue Injuries, Second Edition. W. B. Saunders Company, Philadelphia, 1960. 372 pages, $5.00.

MEDICAL AND BIOLOGICAL RESEARCH IN ISRAEL—Moshe Prywes, editor. Published by The Hebrew University of Jerusalem and Hadassah, The Women's Zionist Organization of America, 1960. Obtainable through Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y. (for the Americas). 562 pages, $8.00.

MODERN OCCUPATIONAL MEDICINE—2nd Edition—Thoroughly Revised; A. J. Fleming, M.Sc., M.D., F.A.C.P., Medical Director, E. I. du Pont de Nemours & Company, and C. A. D'Alonzo, M.D., F.A.C.P., Assistant Medical Director, Medical Division, E. I. du Pont de Nemours & Company, Editors. J. A. Zapp, Ph.D., Director, Haskell Laboratory for Toxicology and Industrial Medicine, E. I. du Pont de Nemours & Company, Associate Editor. Lea & Febiger, Washington Square, Philadelphia 6, Pa., 1960. 587 pages, $12.00.

OUTLINE OF PATHOLOGY—John H. Manhold, Jr., D.M.D., M.A., F.A.C.D., Professor and Director of Oral Diagnosis and Pathology for the College of Dentistry, Seton Hall College of Medicine and Dentistry; Attending Pathologist, Jersey City Medical Center; and Theodore E. Bolden, D.D.S., M.S., Ph.D. Assistant Professor of Oral Diagnosis and Pathology, College of Dentistry, Seton Hall College of Medicine and Dentistry; and Attending Pathologist, Jersey City Medical Center. W. B. Saunders Company, Philadelphia, Pa., 1960. 340 pages, $4.75.

PROJECTIVE TECHNIQUES WITH CHILDREN—Albert I. Rabin and Mary R. Haworth, editors. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 392 pages, $11.75.

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PSYCHOLOGY OF DEAFNESS, THE—Sensory Deprivation, Learning, and Adjustment—Helmer R. Myklebust, Northwestern University. Grune & Stratton, Inc., 381 Fourth Avenue, New York 16, N. Y., 1960. 393 pages, $7.75.

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TREATMENT OF CANCER AND ALLIED DISEASES—SECOND EDITION—Tumors of the Breast, Chest, and Esophagus, Volume IV. By Sixty-seven Authors. George T. Pack, M.D., F.A.C.S., and Irving M. Ariel, M.D., F.A.C.S., editors. Paul B. Hoeber, Inc., Medical Division of Harper & Brothers, 49 East Thirty Third Street, New York 16, N.Y., 1960. 667 pages, $30.00.

YEAR BOOK OF OBSTETRICS AND GYNECOLOGY (1960-1961 Year Book Series)—edited by J. P. Greenhill, B.S., M.D., F.A.C.S., F.I.C.S. (Honorary) Professor of Gynecology, Cook County Graduate School of Medicine; Attending Gynecologist, Cook County Hospital; and Senior Attending Obstetrician and Gynecologist, Michael Reese Hospital. The Year Book Publishers, Incorporated, 200 East Illinois Street, Chicago 11, Ill., 1960. 576 pages, $8.00.

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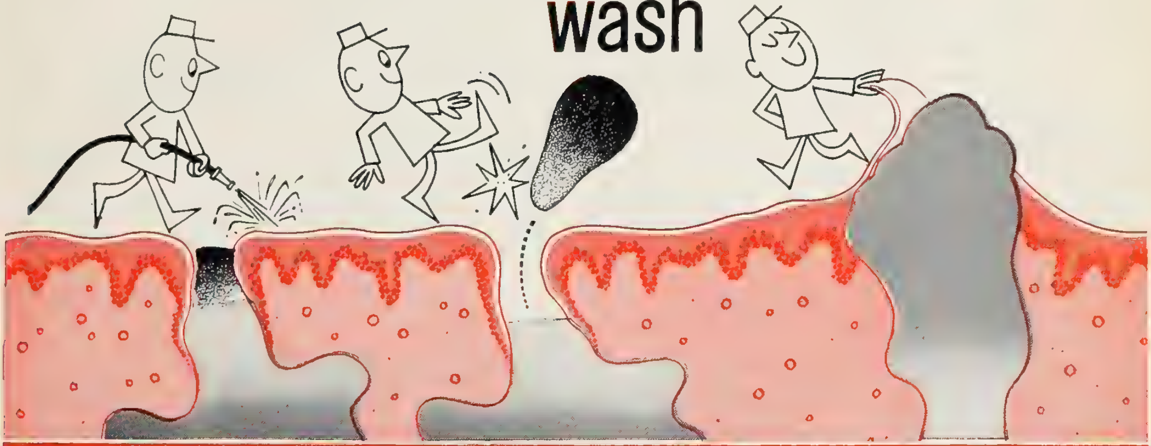

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Platinum Blonde Bleaching Makes Hair Dangerously Brittle

(Continued from Page 64)

primarily limited to the hair shaft itself," she said.

"Future growth and inherent physical characteristics are not affected. Skin reactions may occur in some persons, but reported cases are few in comparison with the large number who bleach their hair.

"Bleaching damages the hair because the hydrogen peroxide must penetrate to the cortex of the hair where the hair pigment is located. In so doing, it often leaves the hair dry, brittle, and more absorbent.

"The extent of hair damage depends on several variables, one of which is the degree of bleaching. For example, the extreme degree to which bleaching must be carried out to render the hair platinum blonde usually makes the hair dangerously brittle.

"Furthermore, a recent study has demonstrated that when hair is bleached, the ensuing damage does not stop with the process. With each shampoo certain decomposition products and oxidized pigments are extracted from the hair shaft and damage recurs."

The exact nature of the damage is unknown which "accounts at least in part for the lack of methods to protect the hair against the deleterious effects of hydrogen peroxide," Dr. Conley said.

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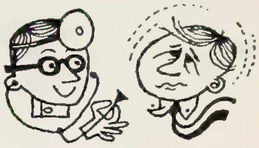

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Reference: 1. Scal, J. C.: Eye Ear Nose & Throat Month. **38**:738 (Sept.) 1959.

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Kidney Substance Linked to High Blood Pressure

New evidence has been found implicating the kidneys in the development of high blood pressure.

A recent study shows that a substance released by the kidneys, angiotensin, produced significant increases in the secretion of aldosterone, a hormone found in excess in cases of malignant hypertension.

Angiotensin is liberated as a result of altered blood circulation or a deficiency of blood in the kidney. Aldosterone is produced by the adrenal glands, which lie adjacent to the kidneys. The hormone accelerates kidney retention of sodium chloride, or salt, and elimination of potassium.

The studies were reported by Dr. John H. Laragh, department of medicine, Columbia University College of Physicians and Surgeons, New York City, in two articles in the Sept. 17 *Journal of the American Medical Association.*

Angiotensin, like norepinephrine and epinephrine also produced by the adrenal glands, tends to increase blood pressure. Dr. Laragh compared the effects of angiotensin with the other two substances.

Unlike norepinephrine and epinephrine, which had varying effects, he said, "infusion of angiotensin in seven subjects produced an increase in the aldosterone secretory rate in every experiment."

Angiotensin is released by an enzyme, termed renin, found in the blood-deficient kidney, Dr. Laragh explained. Aldosterone, by causing sodium retention, might tend to improve the kidney circulation leading in turn to suppression of the enzyme, he said.

"More work must be done, but it now seems that the approach to malignant hypertension should be aimed at measures to define and to correct abnormalities in the renal [kidney] circulation," he said. "Included in the therapeutic approach may be the feeding of added sodium chloride in an attempt to improve the renal circulation, rather than its deprivation, as has been popular heretofore."

Co-authors of one of Dr. Laragh's reports are Marielena Angers, M.D.; William G. Kelly, Ph.D., and Seymour Lieberman, Ph.D., all of New York City.

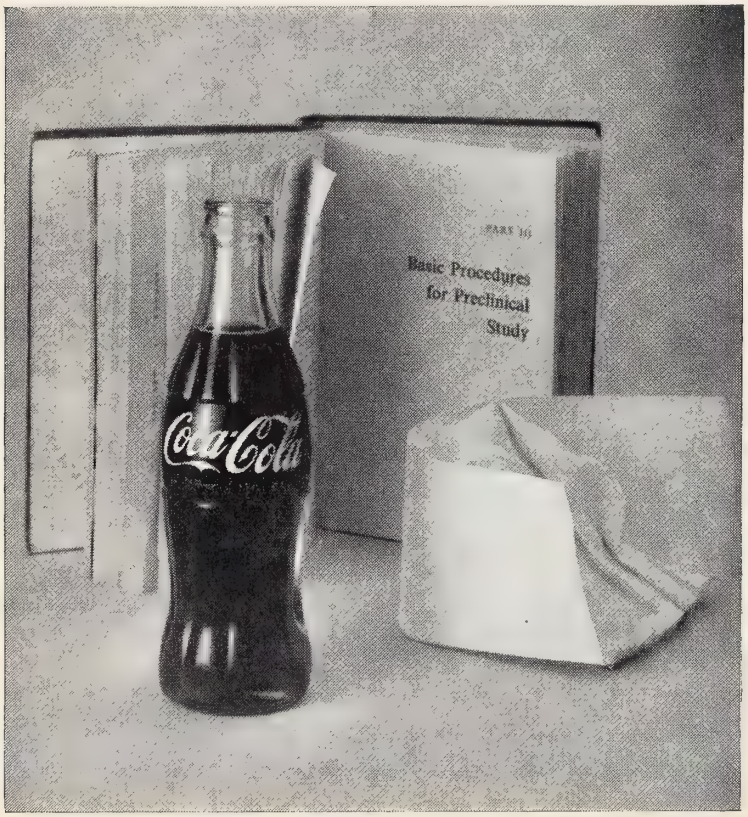
Antidepressant Drug Aids Mild Diabetics

A drug designed to fight mental depression, imipramine hydrochloride, has been found to benefit persons with mild diabetes.

Results obtained in five patients are reported by four Cincinnati physicians in a preliminary communication in the Oct. 1 *Journal of the American Medical Association.*

The effect of the drug was noted when it was prescribed for several mild diabetics who were also

(Continued on Page 76)



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Military Study Shows Surgery Effective Against TB

Surgical intervention proved 97 per cent effective in curing advanced tuberculosis of the lung among a selected group of military personnel and their dependents.

The study was conducted by Col. David E. Thomas and Lt. Col. Elmore M. Aronstam, MC, at Valley Forge Army Hospital, Phoenixville, Pa.

Writing in the September 3 *Journal of the American Medical Association*, the physicians said the disease was found to be inactive in 378 of 391 patients followed up five years after they underwent surgical removal of part of a lung.

Of the 378, 370 (98 per cent) were capable of employment, they said.

"Consideration of the results obtained in this study leaves no room for doubting the value of excisional surgery in tuberculosis, both as a means of controlling the disease and as an aid in the economic rehabilitation of the individual patient," they said.

However, the authors pointed out that the results were obtained under "ideal circumstances" inasmuch as the patients were selected, relatively young, and easy to control being subject to military discipline.

"The number of soldiers rehabilitated and returned to duty [131] is the important statistic from a military standpoint," they wrote.

"A large number of those returned to duty are noncommissioned officers and officers, persons who represent a large investment in training and have valuable military skills. Without excisional surgery most of them would have been retired."

Antidepressant Drug Aids Mild Diabetics

(Continued from Page 74)

depressed. Administration of the drug was followed by a decrease in the amount of sugar excreted. A high level of sugar excretion is a symptom of diabetes, which is a disorder that prevents the body from utilizing sugar normally.

Each subject's response to the drug and to discontinuance of it was tested several times, the authors said. However, they stressed that their findings were not conclusive because of the small number of patients studied.

Further investigation is warranted, they said, because it is important to study any agent that demonstrates an effect on the clinical course of diabetes.

The authors are Drs. Stanley M. Kaplan, James W. Maas, John M. Pixley, and W. Donald Ross, who are associated with the University of Cincinnati College of Medicine and the Cincinnati General Hospital.

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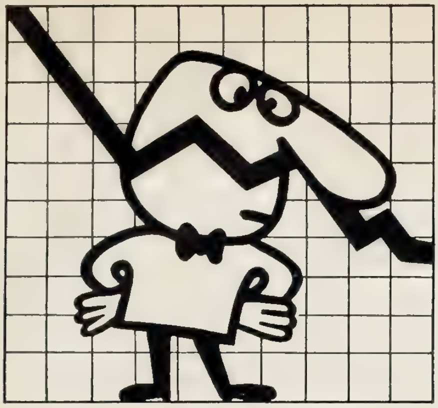

A U. S. Senator recently said, "In investigating the pharmaceutical industry, we are investigating and inquiring into an industry that has won and which deserves public approval and confidence . . . It has been my judgment that the hearings to which I have referred, so far have been prejudiced and distorted." To paraphrase a political saying . . .

Let's Look At The Record On Drug Prices

In relation to "real income," drug prices have actually declined in recent years. At prevailing wages in 1929, it took 91 minutes of working time to pay for the average prescription. Only 86 minutes of labor paid for the average prescription in 1958. As one economist put it, "If the retail prices of drugs had risen as much as the consumer price index since 1939, it would cost the consumer at least an additional one billion dollars to buy the drug preparations now consumed." He goes on to compare the $19.02 per capita drug expenditure in 1958 with the $37.19 spent on tobacco products and $53.72 for alcoholic beverages. • When your patients inquire about the cost of medication, perhaps these facts will be helpful in explaining that today's prescription, averaging about $3.00, is a relatively modest investment in better health and a longer, more productive life.

This message is brought to you in behalf of the producers of prescription drugs. For additional information, please write Pharmaceutical Manufacturers Association, 1411 K Street, N.W., Washington 5, D.C.

New Approach Described to Physical Rehabilitation

(Continued from Page 35)

imposing bodily movements for which the damaged part of the brain normally was responsible. These exercises were carried out regularly with the help of adults for five minutes, four times daily.

For example, one adult would move the child's head, another his right arm and leg and another the left arm and leg.

"It should also be stressed that during the study all other programs of therapy or habilitation were discontinued and that no mechanical aids, such as braces or crutches, were used," the authors said.

The results, they said, were "sufficiently encouraging to warrant an expanded and continued study of these procedures."

"Of the 20 children unable to move and the 17 unable to walk, none remained at these stages. Twelve children were ready to walk at the end of the study. Eight were creeping . . . and four were holding onto objects.

"Eleven children learned to walk completely independently. All but two of these had begun treatment at, or before, two years of age, and all achieved completely independent walking in less than 12 months of treatment."

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Electrocardiography & Heart Disease	One Week, April 17
Diagnostic Radiology	Two Weeks, April 3
Board of Surgery Review, Part II	Two Weeks, Mar. 6
Gynecology, Office & Operative	One Week, Feb. 13
Vaginal Approach to Pelvic Surgery	One Week, Jan. 30
Obstetrics, General & Surgical	One Week, Feb. 6
Fractures & Traumatic Surgery	Two Weeks, Mar. 6
Practical Cystoscopy	Ten Days, by appointment
Surgery of the Hand	One Week, April 17
Advancements in Medicine	One Week, Mar. 13
Urology	Two Weeks, April 24

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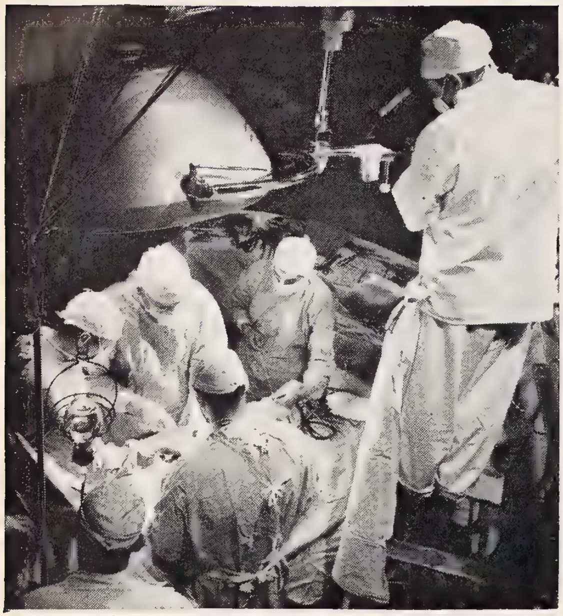

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Frozen Foods Found Safe, Nutritious

Frozen foods handled according to good commercial practice are "safe, nutritious, and flavorful," it was reported in the October 29 issue of the *Journal of the American Medical Association.*

However, the report said studies showed frozen precooked foods, such as poultry pies and prepared dinners, "offer ideal conditions" for contamination.

In a report to the American Medical Association Council on Foods and Nutrition, Horace K. Burr, Ph.D., and R. Paul Elliott, M.S., Western Regional Research Laboratory, U. S. Department of Agriculture, Albany, Calif., said:

"The inherent protective mechanisms found in frozen raw meats, fruits, and vegetables are not present in frozen precooked foods of a moist, bland, neutral nature, such as poultry pies and prepared dinners. Few incidents of food poisoning have been reported. . . .

"Theoretical possibilities of outbreaks, however, are inherent in these precooked foods. They often are contaminated with bacteria in the food plant after they are cooked and offer ideal conditions for bacterial growth.

"Thorough heating of a precooked food by the housewife always is advisable."

The authors pointed out that firms with mass production and laboratory control can maintain low bacterial levels. In the past 10 years, they said, competition has eliminated many smaller firms which used kitchen methods without laboratory controls.

Many bacteria are killed in the freezing process or in subsequent storage, they said.

Food poisoning organisms usually cannot grow at temperatures maintained in an ordinary household refrigerator, they added. Therefore, they said, any microbial growth in foods held at 40 degrees Fahrenheit or below will cause spoilage but will not endanger consumer health.

The studies also showed that frozen foods were "remarkably sensitive" to temperature increases.

"Whereas most chemical reactions are 20 to 35 per cent more rapid when the temperature rises 5 degrees Fahrenheit, certain deteriorative reactions in frozen foods may double, triple, or quadruple their rates with such a temperature rise," the report said.

As a means of improving the quality of frozen foods reaching the consumer, the researchers said the Association of Food and Drug Officials of the United States is developing a frozen food handling code. Meanwhile, they said nine industrial associations, representing processors, transportation companies, distributors, and retailers, are collaborating in the development of voluntary standards for industry practice.